

LogTag Recorders



LogTag Analyzer

User Guide

Software Revision 2.2, Document Revision 1.0

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CHAPTER 1

Introduction

This guide will take you through the relevant steps so that you will be able to make the most of your LogTag[®] products. The guide is structured into chapters that will guide you through the process of installing the software, using the LogTag[®] products and lastly some of the options that are available to you for making your efforts and experience of using the software as efficient, effective and pleasant as possible.

The chapters in this guide are placed in an order that you will need to follow in order to successfully use the LogTag[®] products first time. Experienced users of the software may choose to skip the first two chapters. However, if you are about to use a newer version of a LogTag and/or Interface Cradle, we recommend you at least skim the installation chapter for any relevant changes that should be performed prior to using your new version of LogTag hardware.

This guide covers all the features included in version 2.2 of the LogTag Analyzer software. The chapter [Finding your software version](#) (on page 143) included later in this guide will help you through the process of finding out what version of the LogTag Analyzer software is being used and will help explain and determine if this version of the guide refers to the version of the software being used. The chapter Getting updated software included later in this guide will help you through the process of obtaining an updated copy of the software. Therefore, if you find a feature described within this guide that does not appear in your software and/or a feature within the version of software being used that is not described in this guide, then we recommend you obtain a newer version of the software and/or a newer version of this guide. You may obtain a free online copy of the latest version of this guide from the LogTag Recorders Internet site, www.logtagrecorders.com.

Although this guide includes all the relevant information to install and use the product range supplied by LogTag Recorders, there are at times an expectation that the reader is familiar with using their computer and the Windows[®] operating system. If a feature of the software is specific to a version of the Windows[®] operating system, the guide will indicate appropriately for you the relevant differences.

Feedback, positive or negative, about the software, the LogTag[®] products and/or this guide is welcome. If you believe the products could be improved, you are welcome to send us your comments and we will do our best to include the improvements in a future release.

CHAPTER 2

Installing the software

To make use of your LogTag you will need to first install the software on your computer. This will allow you to prepare your LogTag(s) for use, retrieve the readings the LogTag(s) have recorded, and analyze the data. This chapter will take you through the steps necessary to successfully install the software on to your computer so you can begin using your LogTag(s). The process of installing the LogTag Analyzer software should be very familiar to users that have previously installed other software and therefore some experienced users may choose to only skim read or entirely skip this chapter. If you are new to using a computer and/or unsure about installing the software, we recommend you read the remainder of this chapter.

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System requirements

To ensure that the software will work on your computer following minimum specifications are required:

- PC capable of running Windows XP or later, or Windows 2003 Server or later
- 60MB free disk space
- Internet Explorer 5.0 or later
- 1 available serial port and/or 1 available USB port, depending on purchased interface
- 1024 x 768, or higher, screen resolution.
- 256 screen colours

The recommended specifications are:

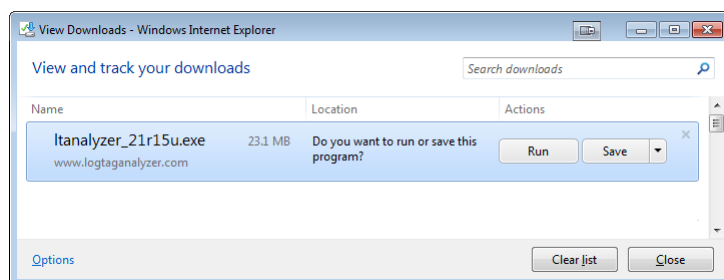
- Processor equivalent to Pentium IV or later
- 512MB of available RAM
- Internet Explorer 6.0 or later
- 65535 (16bit), or more, screen colours.

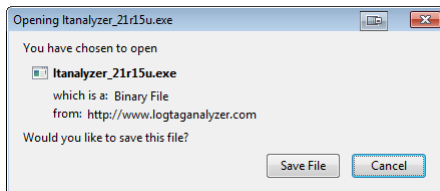
If you are unsure of what your computer specifications are, please read the section about [Finding your computer specifications](#) (on page 147), which will help you locate the relevant information.

Getting a copy of the software

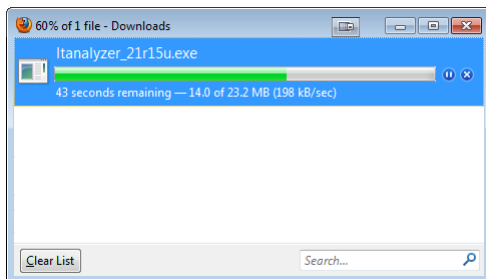
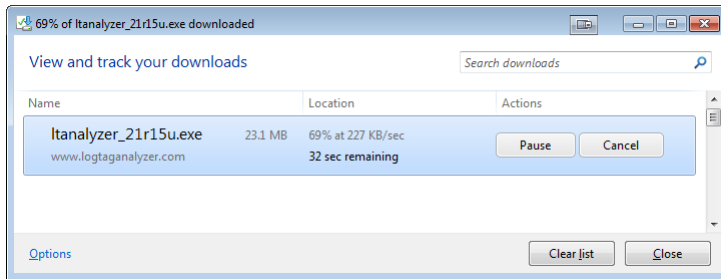
The software is available for download from the LogTag Recorders website, www.logtagrecorders.com. LogTag Recorders does not charge for the download of this software or for updates. You are welcome to distribute copies of the LogTag Analyzer software provided it is distributed unaltered, in the packaged format as originally downloaded from the LogTag Recorders website.

To obtain the software, visit the LogTag Recorders website and navigate to the software download page. Complete and submit the download request form. Within a few minutes you will receive an e-mail at the address entered in the form with a link for the latest download file. Click on the link and confirm whether you wish to open the downloaded file or to save it to a folder on your PC.






Depending on the type of browser and its version you may get different windows to start and process the download. Modern browsers like Windows Explorer or Mozilla Firefox typically have a special directory into which all downloads are copied.



If you have an older browser, we recommend you select a folder on your PC that you can easily access (such as the "Documents" or "Download" folder), but you are free to choose any folder for which you have write permissions. The downloaded file is a single executable installer file; no other files are required for installation of LogTag Analyzer software on your computer.

Once the installation process has completed the installer file is no longer required and can safely be deleted.

The installation process

To install the LogTag Analyzer software, locate the installation file downloaded in the previous step and execute it (typically by double clicking or selecting the file in Windows Explorer and pressing ). Follow the on-screen instructions. Initially, the process will require you to enter data such as your organisation and name, and select installer language and the program's storage location. We recommend you leave all options at their default setting, especially if you are unsure of what option to select or what changing the option would mean.

To proceed through each step of the installation process, click the "Next" button. If you want to change a previous step you can click the "Back" button. When all required data have been entered, click the "Finish" button to complete the installation process. If you want to stop installing the software, click the "Cancel" button.

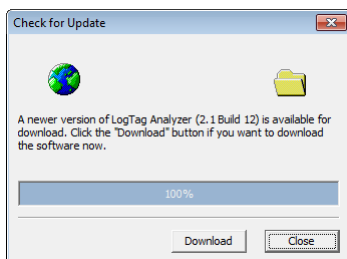
The drivers required to operate your USB interface are installed as part of the main installation process. From time to time updated drivers may be released by LogTag Recorders. These drivers will be available through the Microsoft Windows[®] Update feature, as an optional hardware update, or as part of an upgraded installer file (see [Upgrading from earlier versions](#) on page 12.)

Upgrading LogTag Analyzer

LogTag Recorders will publish updates to LogTag Analyzer to introduce new or enhanced features or to support new LogTag models. You can get these updates...

- ... automatically, if you have enabled "Automatic Updates" (see [Software Updates](#) (on page 121))

By default, this option is turned on. We recommend leaving this turned on, so you will automatically be notified when an update is available. You will see the following window, letting you choose to whether or not you wish to update at this stage:



- ... through the Help menu by selecting "Check Internet for update..."

When you select this option, LogTag Analyzer will check the LogTag Recorders website for a newer version of the software

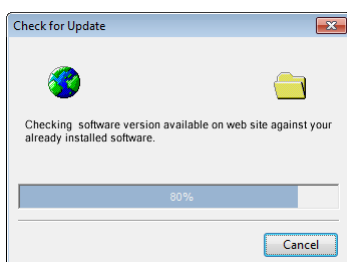


Figure 1: Checking for an update on the internet

Neither of these two options will transmit any information about you or your system to LogTag Recorders, so you can rest assured your privacy is maintained.

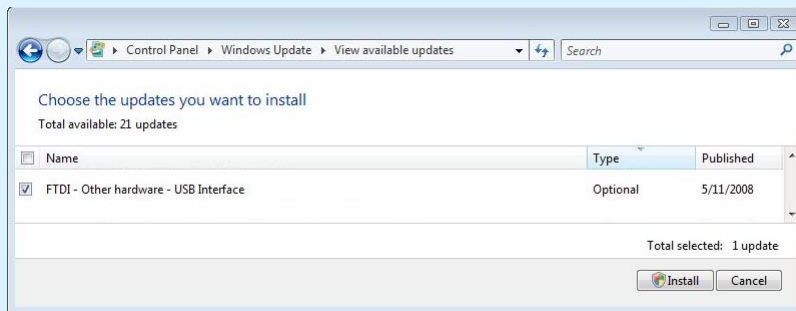
- ... by downloading an upgraded installer file from the LogTag Recorders website.
This requires you do check yourself if the version currently offered for download is more recent than the one installed on your PC. You can find the version number of the software installed on your PC in the [Help menu](#) (see "Finding your software version" on page 143).

LogTag Recorders recommend that you always use the latest version of the software.

If a newer version is available, you can [download the updated version](#) on page 10 of the installer file to your PC and then proceed with the [installation process](#) on page 11. The older version of the software will be replaced with the new version.

Installing a newer version will update all the relevant program files. It will not affect any of your LogTag data files or your custom settings of the software. You may however need to check any shortcuts to the program you made, as the location of the program files can change.

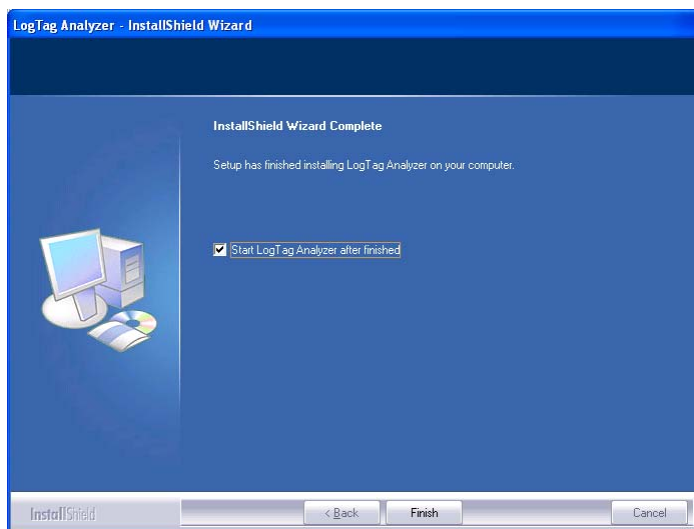
If you are upgrading from version 1.7r10 or earlier, the installed unsigned USB drivers will not be replaced automatically. To replace the USB drivers you will need to go to Windows Update and select the FTDI - USB Interface update from the "Other hardware" section. Please refer to your Operating System manual or help on how to access this feature.



You can also update your driver from the Control Panel device manager. Please see [Resolving USB Driver Problems](#) (on page 153) later in this document.

Starting the software

At the conclusion of the installation process you can immediately start the LogTag Analyzer software by ticking the "Start LogTag Analyzer after finished" check box.



At any time you can start the software ...

- ... by double clicking the "Shortcut" on the desktop



- ... by navigating to the "Shortcut" in the "Start" menu system.

Click on the "All Programs" item to locate the "LogTag Analyzer" shortcut, similar to the following picture:

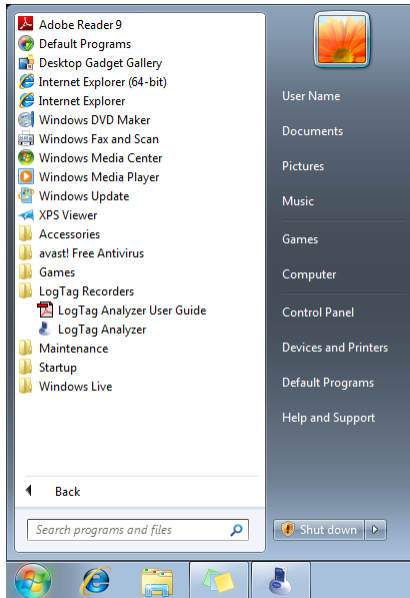


Figure 2: Windows 7 Start Menu

Please refer to your operating system documentation for further assistance about program locations and how to execute programs.

CHAPTER 3

Quick Start Guide

You've got the software installed on your computer and now you want to use the LogTag, see how it goes and what it can do. This chapter will briefly cover the steps involved to get your LogTag ready to use, how to get it started and then retrieve the recorded information out of the LogTag. The subsequent chapters will explain in more depth these steps and the various options available to you.

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Connecting the Interface

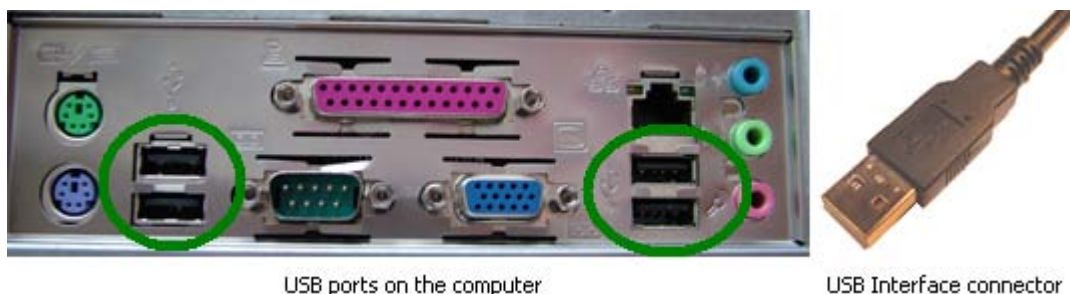
There are two types of the Interface Cradle available. The first connects to the computers serial (RS232) communications port and the other connects to the computers USB (Universal Serial Bus) communications port. Although there may be multiple connectors on the computer for each of these types of communications ports, the shape of each is unique and therefore it is not possible to connect the Interface Cradle to the wrong type of communications port. The software supports the connection of multiple Interface Cradles at the same time and therefore as many serial and/or USB Interface Cradles as are needed and the computer supports may be connected.

The connectors for the serial (RS232) communications ports typically look like the following picture.



Serial (RS232) communication ports can be typically found at the rear of the computer and there are usually at most two ports installed on a single computer. Most serial Interface Cradle connectors will have screws included on the plug and as such we recommend that these are tightened when the connector is plugged in so that it does not accidentally pull out during usage.

The connectors for USB devices typically look like the following picture.



Connectors for USB devices and the sockets on the computer where USB devices are plugged in will often display a USB logo nearby to help them be identified. Example pictures of the USB logos that may appear are:



The sockets for the USB communication ports are typically located at the rear of the computer. In some computers there may also be two or more USB communication ports located on a front panel of the computer and/or on the top of the computer case. Please ensure that the software has been installed prior to connecting the USB Interface Cradle to the computer as the software installation also installs the drivers required to successfully connect and use the USB Interface Cradle. If you experience problems getting the software to find and identify a connected USB Interface Cradle then there may have been a problem during the installation of the software with the installation of the drivers that the USB Interface Cradle requires. The subsequent section [resolving USB driver problems](#) (on page 153) will guide you through the steps necessary to resolve any problems with getting USB Interface Cradles working on the computer.

If the computer is using the Windows NT® operating system, a USB Interface Cradle will not be able to be used, as Windows NT® does not support USB devices.

Using the LogTag with the Interface

The LogTag fits into the Interface Cradle slot with the front of the LogTag facing towards the front label of the Interface Cradle with the contacts on the reverse side, similar to the following picture.



Figure 3: LogTag in interface cradle

If you look into the Interface Cradle slot, you will be able to see where the contacts connect with the matching contacts in the Interface Cradle.

When placing the LogTag into the Interface Cradle slot, you should be able to feel a very slight resistance as the contacts "grab" the LogTag. This is normal. Removal of the LogTag will cause a slight clicking noise as the contacts snap back into their "unloaded position".

If the LogTag has readings stored within its memory, the software will automatically start to download the data and will also display an animated picture during the download process, similar to the following picture.

The download process can be stopped by clicking on the "Cancel" button below the download animation or by pressing the "Esc" key.

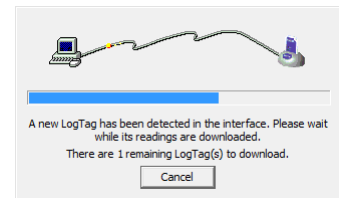


Figure 4: Downloading a LogTag Recorder

Get a LogTag ready for use

To begin the process of preparing a LogTag to record information, first click the LogTag icon (📁) that is located on the [toolbar](#) (see "Menus and Toolbars" on page 124), which will start the LogTag wizard.



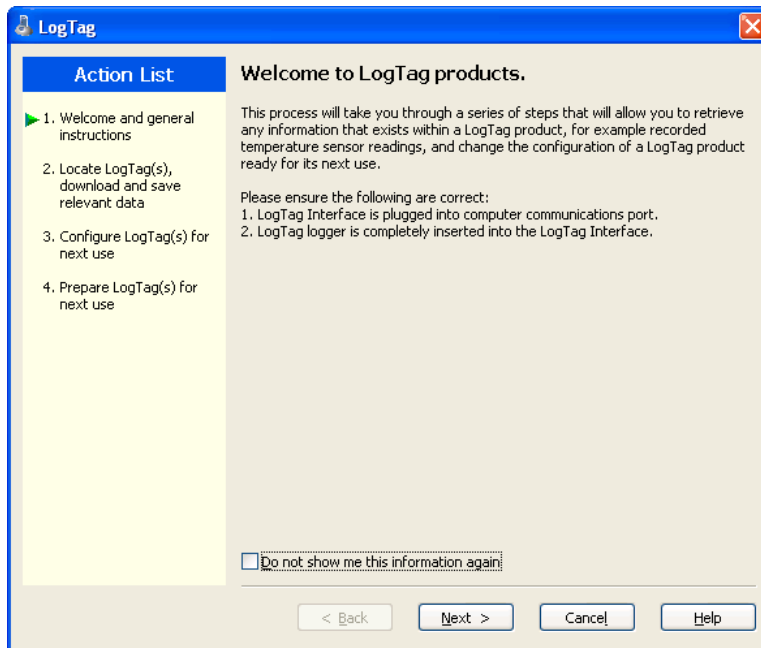
The LogTag wizard performs two distinct tasks:

- 1 It finds the communication port (USB and/or Serial) that the LogTag is attached to through the Interface Cradle and retrieves the data that is stored within the LogTag, and
- 2 It allows the LogTag that is currently connected and in the Interface Cradle to be prepared for its next use.


The wizard is a key part of the software that is used for each of the steps.

Welcome

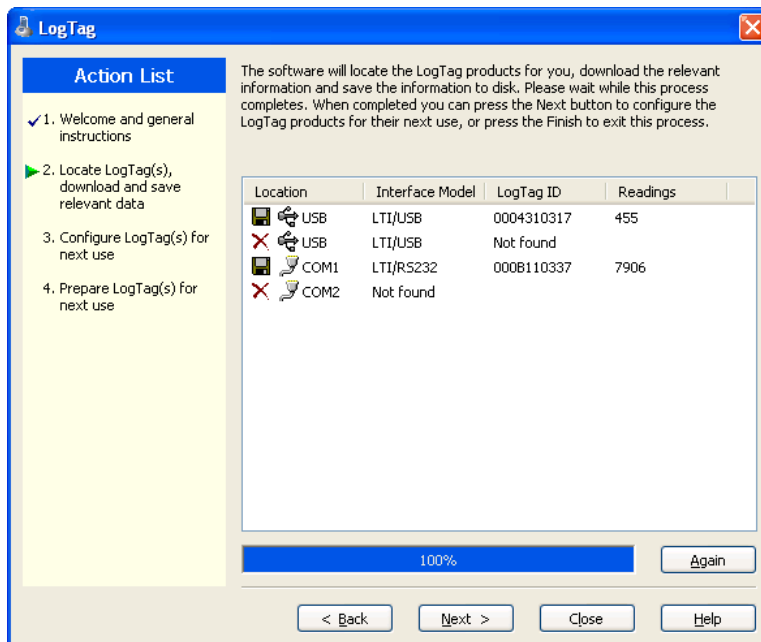
First the Wizard has a welcome screen (this is "1" on the Action List). This asks you to make sure you have not neglected to place the LogTag firmly in the Interface Cradle.







The Wizard is responsible for certain "Action Steps" and these are clearly listed at the left in the wizard window.

To get to the next screen, click on  and the next wizard screen will appear. The green arrow will indicate you have moved to Step 2.


Locate LogTag(s) download and save relevant data





In this screen you will see one of the following pictures next to each of the items in the list:

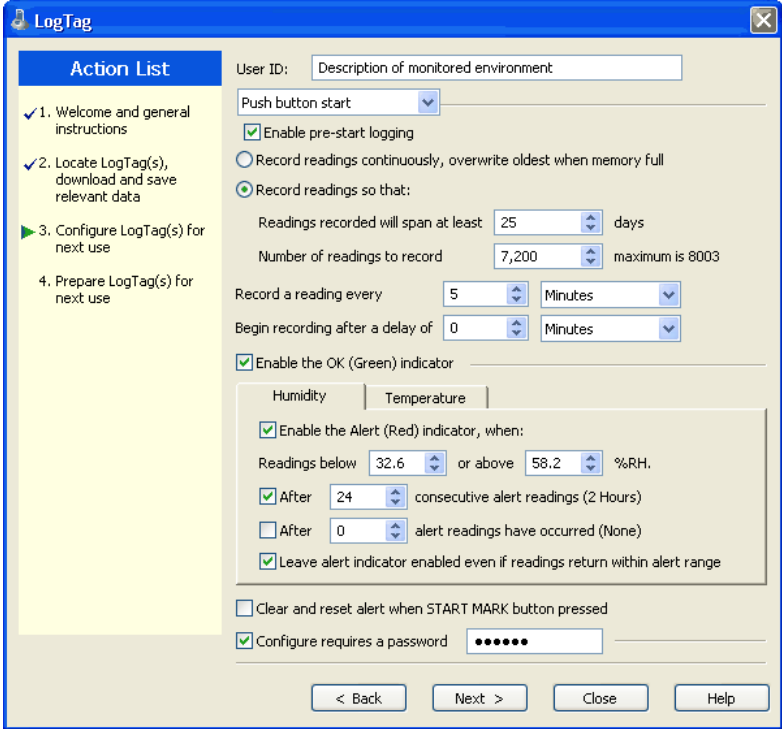
- (no picture) indicates the software is still using this communications port.
-  Data was successfully retrieved from the LogTag and stored/saved to disk.
-  Data was successfully retrieved from the LogTag but there was no need to save the information to disk.
-  The software was unable to detect an Interface Cradle connected to the communications port or was unable to detect a LogTag in the Interface Cradle.
-  The LogTag is a single use logger and cannot be prepared for use again and should therefore be returned to the supplying distributor or agent once you have finished with the LogTag. You will still be able to continue to retrieve information stored within the LogTag.

The LogTag should be almost instantly recognized by serial number and the number of readings. It is possible to have and use more than one communication port at a time and if so, the wizard will find all the LogTags.

The communication ports that are not in use (the ones that initially are reported with the  mark) can be removed from view by selecting an [option](#) (see "Communication Ports" on page 120). You don't have to do that now, but you can do it later to clean up the "wizard window" appearance.

To get to the next screen, click on  and the third wizard step screen will appear. The software will automatically proceed to the next wizard step, as if the user clicked on , if each of the Interface Cradles detected have a LogTag detected in them and the information within the LogTag was successfully retrieved.

Configure LogTag(s) for next use

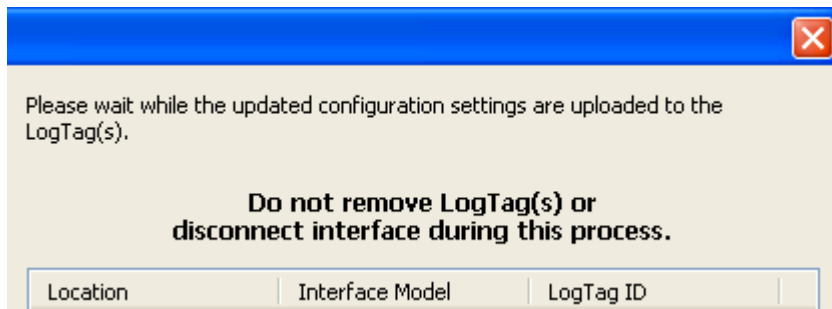


The screenshot shows the 'LogTag' configuration window. On the left is an 'Action List' with four steps: 1. Welcome and general instructions, 2. Locate LogTag(s), download and save relevant data, 3. Configure LogTag(s) for next use (highlighted with a green arrow), and 4. Prepare LogTag(s) for next use. The main area contains settings for 'User ID' (Description of monitored environment), 'Push button start' (dropdown), 'Enable pre-start logging' (checked), and recording options. Under 'Record readings so that:', 'Readings recorded will span at least' is set to 25 days, and 'Number of readings to record' is 7,200 (maximum is 8003). 'Record a reading every' is set to 5 minutes, and 'Begin recording after a delay of' is 0 minutes. There are checkboxes for 'Enable the OK (Green) indicator' (checked) and 'Enable the Alert (Red) indicator, when:'. The alert settings show 'Readings below 32.6 or above 58.2 %RH.', 'After 24 consecutive alert readings (2 Hours)', and 'Leave alert indicator enabled even if readings return within alert range' (checked). At the bottom, there are buttons for '< Back', 'Next >', 'Close', and 'Help'.

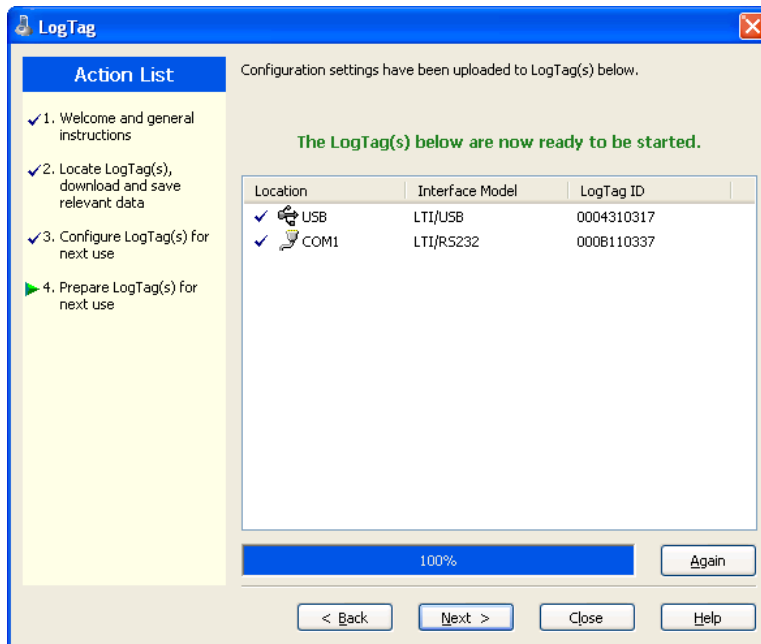
The options are available so you have appropriate control over the way the LogTags will behave and store data for the upcoming period of recording. These options are explained in more detail in the chapter "Preparing LogTag for use on page 25". Click [Next >](#) to record the configuration data and you will see the final confirmation screen.

Prepare LogTag(s) for next use

The last Wizard screen involves sending the new configuration data to each LogTag to prepare them for their next use. While the software is sending the new configuration data to each LogTag the top of the window will look similar to the following picture. The process of sending the new configuration data to each LogTag should take less than 20 seconds in total to complete.





Once the software has finished uploading the updated configuration information into each LogTag, the window displaying the progress will look similar to the following picture.




In this screen you will see one of the following pictures next to each of the items in the list:

- (no picture) indicates the LogTag is still in the process of being prepared for its next use.
- ✓ The LogTag was successfully prepared for its next use.
- ✗ The LogTag failed to be prepared for next use. Press [Again](#) to try again.

-  The battery within the LogTag is low and is unlikely to have enough capacity to record all the data you want during its next use. In this situation the LogTag should no longer be used.

When all LogTags have finished receiving their new configuration data, click  to close the wizard. Your LogTag(s) are now ready to be started and used.

Please note that the automatic download feature is disabled in this screen. If you use the  button to configure a different LogTag, you may update the configuration of a LogTag with unsaved data.

Starting and using the LogTag

Once a LogTag has been successfully configured for use it is ready to be started. There are two discrete methods available to start a LogTag recording, which are selected during configuration. These start methods are explained in more detail in the chapter "[Preparing LogTag for use](#) on page 25".

- 1 By pressing and holding the START MARK button on the LogTag until both the OK and Alert lights alternately flash on and off.
- 2 By waiting until the date/time defined during configuration is reached, at which time recording will automatically commence. Pressing the START MARK button will have no effect until recording has commenced.

You can also have the LogTag record an "inspection" mark at any time while it is recording, simply by pressing and holding the START MARK button on the LogTag until both the OK and Alert lights flash on and off at the same time. You may have the LogTag record as many inspection marks as you want while it is recording, however only one inspection mark can be recorded per reading. In other words, if your LogTag is configured to take readings at 15 minute intervals, inspection marks can be recorded at intervals of 15 minutes or more. If the LogTag has finished recording then pressing the START MARK button will have no effect until after the LogTag has been prepared for next use.

Once the LogTag has started recording (either via Start button or date/time start) the Alert and OK indicator lights operate as detailed in the section about [LogTag light patterns](#) on page 23.



LogTag light patterns

The LogTag's LED's signal a number of different events or status information. The table below contains a summary of the light patterns you may come across during use.

Signal	Sequence	Occurrence
LogTag wake-up signal	Sequence of four alternate flashes of green-red LED's	<ul style="list-style-type: none"> displayed after configuration has been successfully applied to the LogTag. when a LogTag is woken up from hibernation (see "Hibernation - Prolonging battery life" on page 48) state. <p>Not to be mixed up with...</p>
LogTag start-up signal	Sequence of sixteen alternate flashes of green-red LED's	<ul style="list-style-type: none"> displayed when the LogTag starts its recording cycle.
Mark signal	Sequence of five simultaneous flashes of green and red LED's	<ul style="list-style-type: none"> displayed when pressing start/mark button while recording to indicate an inspection mark in the software. displayed directly after the start-up signal following a push button start where a recording delay has been configured. In this instance the start-up signal is repeated when the actual recording begins.
Logging active, no alert present	Single flash of green LED every 4 seconds (approx.)	<ul style="list-style-type: none"> indicates LogTag is recording. <p>This is not displayed when pre-start is active and the main logging cycle has not yet started. It is also not displayed when the green LED has been turned off in the configuration screen.</p>
Logging finished, no alert present	Single flash of green LED every 8 seconds (approx.)	<ul style="list-style-type: none"> indicates LogTag has finished recording. <p>This is not displayed when the green LED has been turned off in the configuration screen.</p> <p>Will also be displayed when unit has been woken up from hibernation.</p>
Alert condition present	Single flash of red LED every 4 seconds	<ul style="list-style-type: none"> displayed when the LogTag has detected an alert condition (see "Alert Processing" on page 33) and the Alert LED has been activated. <p>If an alert is present you cannot determine if the unit is still logging or has finished its log cycle. The Alert LED will flash every 4 seconds to ensure an alarm condition is not overlooked.</p>
Communication	The green LED will flash occasionally	<ul style="list-style-type: none"> during communication with the interface the green LED will flash occasionally; no information is conveyed in this.
Start button press	red LED glows faintly	<ul style="list-style-type: none"> This is by design but conveys no information.

Retrieve information from LogTag

When you are ready to view the recordings that are stored within the LogTag, just place the LogTag into the Interface Cradle as before. If the LogTag is still recording when you go to retrieve the readings it will continue to record without interruption so you will be able to download again later if you choose.

If the LogTag has readings stored within its memory, the software will automatically start to retrieve a copy of the recording contained within the LogTag and will also display an animated picture during the download process, similar to the following picture.



Figure 5: Downloading a LogTag Recorder

Once the readings have been successfully retrieved from the LogTag(s), the software will display the information for you. The chapter "[Results from LogTag](#) (on page 51)" explains in more detail the information that is displayed to you as a result of retrieving the recorded readings from LogTag(s).

Your LogTag may now also be reconfigured for another trip with the same settings as before, if you have this option activated.

CHAPTER 4

Preparing LogTag(s) for use

Before you can use a LogTag to monitor and record environmental conditions you must first prepare it for use. The process of preparing a LogTag for use allows you to define a number of parameters, including:

- How long it should record the environmental condition for, so that you can be assured that it will record for the duration of time required. For example, if you want it to monitor a shipment that will take 10 days to deliver, you will be able to make sure it will record the humidity and/or temperatures throughout the entire 10 day period.
- How often it should record the environmental conditions.
- Under what conditions it should display an alert. An alert indicates when the environmental condition being recorded is not within set limits.

This chapter explains how to prepare a LogTag for use and what the options mean.

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Getting a LogTag ready for use

There are two ways to prepare a LogTag for use, both of which will achieve the same result. Once a LogTag has been through the configuration process to get it ready for next use, any readings previously recorded will no longer be available for retrieval.

- Click the LogTag icon (📁) on the toolbar or the "Wizard..." menu item located in the LogTag menu.

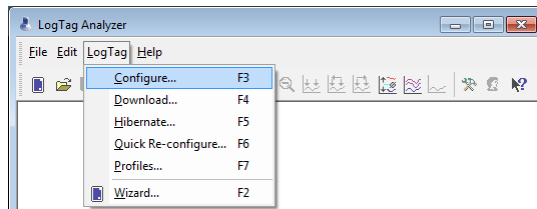


Figure 6: Menu bar - LogTag Menu

This is the safest option, as it will retrieve any readings that are stored within the LogTag and save them to disk before getting the LogTag ready for next use. This option is useful when you are unsure whether or not the readings stored within the LogTag have been previously retrieved and saved to disk.

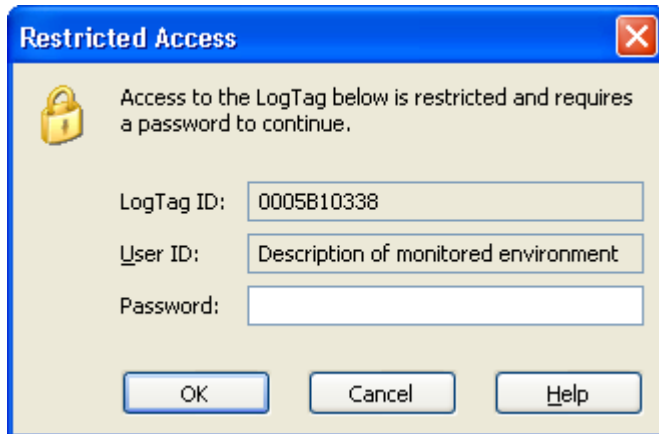
- Click the "Configure..." menu item located in the LogTag menu.

This is the quickest option, as it does not involve the step that retrieves any readings that are stored within the LogTag. This option is useful when you know you have previously retrieved the readings or you no longer need a record of the readings that are currently stored within the LogTag.


The wizard will appear once you have selected the option of your choice to guide you through the necessary steps to prepare a LogTag for next use. While the wizard is visible the "Automatic download" feature will be disabled.

Restricting Access

Users can enable a password protection feature. If enabled, a user will need to provide the correct password for future access to the LogTag, and a window similar to the following picture will be displayed so the correct password can be entered.

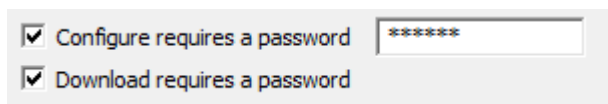


The relevant process and/or wizard will only continue if the correct password is supplied. Passwords are case sensitive and therefore the passwords "Bob" and "bob", for example, are different. The password can be up to 6 characters and can contain a mix of letters and numbers.

Tip: Very often users tick the password required boxes, but don't enter a password. Such an "empty" password is regarded as a valid password in LogTag Analyzer, hence the password request dialogue will appear when re-configuring such a unit. In this case simply selecting  will advance to the next screen.

Note: Passwords do not use the Unicode character encoding; they use an extended 8-bit character table, which can be quite different from country to country. The make-up of this table is determined by the System locale, in older operating systems this is also referred to as the code page. You should be aware that using characters specific to your code page may result in the logger being inaccessible by a recipient in a different part of the world, even if you have told them the correct password, as the encoding in their country may be different. The safest option in this case is to use numbers only.

Various models offer the option to request a password also when the logger is downloaded. This function can be enabled when configuring the logger by ticking the box next to "Download requires password":



Some models do not have this feature enabled but can be upgraded, so a password can be requested on download. In this case a further check box appears on the configuration screen:

The tick box "Download requires a password" is greyed out if the update has not previously been applied to the logger being configured. Once you tick the "Update logger to enable this feature" box, the "Download requires a password" box becomes available for activation. You can then select the password functions for either configuration or download. The logger will be permanently upgraded as soon as the configuration is downloaded.

Following should be noted:

- The update cannot be reversed.
- If the "Update logger to enable this feature" is ticked, the upgrade will perform, regardless whether any of the "...requires a password" tick boxes are enabled or not.
- If multiple units are configured at the same time using more than one interface, all units will be upgraded if the Upgrade option is selected.
- If this upgrade is applied, LogTag Analyzer 1.8r9 or later will be required to access the loggers. Older versions will display an error message if communication is attempted.
- When the "Again" button is used with a different unit, that unit will also be upgraded.
- Data files cannot be protected by passwords.
- If a unit has been upgraded in a previous session, and is now configured using the "Download requires a password" function, units configured with the "Again" button in the same session will not automatically be upgraded; only those units that have already been upgraded separately in a previous session will have the "Password on download" function enabled.

Preparing LogTag for next use

The "Configure LogTag(s) for next use" step provides you with all the options that can be configured to effect how a LogTag records data during its next use. This screen is automatically presented when you use the wizard, however, you can also configure LogTags by selecting **CONFIGURE** from the **LOGTAG** menu.

Configure...	F3
Download...	F4
Hibernate...	F5
Quick Re-configure...	F6
Profiles...	F7
Wizard...	F2

When you have entered the details and adjusted the settings as desired, click **Next >** to send the configuration information to the LogTag(s).

The screenshot shows the 'LogTag' configuration window. On the left is an 'Action List' with four steps: 1. Welcome and general instructions, 2. Locate LogTag(s), download and save relevant data, 3. Configure LogTag(s) for next use (highlighted), and 4. Prepare LogTag(s) for next use. The main area contains the following settings:

- User ID:** A text field containing 'Description of monitored environment'.
- Start Method:** A dropdown menu set to 'Push button start'.
- Logging Options:**
 - ☒ Enable pre-start logging
 - ☐ Record readings continuously, overwrite oldest when memory full
 - ☒ Record readings so that:
 - Readings recorded will span at least: 25 days
 - Number of readings to record: 7,200 (maximum is 8003)
- Recording Frequency:**
 - Record a reading every: 5 Minutes
 - Begin recording after a delay of: 0 Minutes
- Indicators:**
 - ☒ Enable the OK (Green) indicator
 - Humidity | Temperature (selected)
 - ☒ Enable the Alert (Red) indicator, when:
 - Readings below: 32.6 or above: 58.2 %RH.
 - ☒ After 24 consecutive alert readings (2 Hours)
 - ☐ After 0 alert readings have occurred (None)
 - ☒ Leave alert indicator enabled even if readings return within alert range
 - ☐ Clear and reset alert when START MARK button pressed
- Security:**
 - ☒ Configure requires a password: [password field]

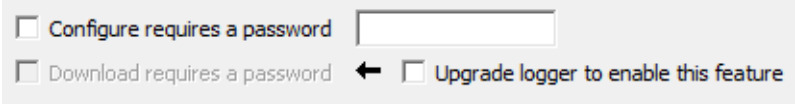
At the bottom are buttons for '< Back', 'Next >', 'Close', and 'Help'.

The following table describes each configurable option that is permitted to change.

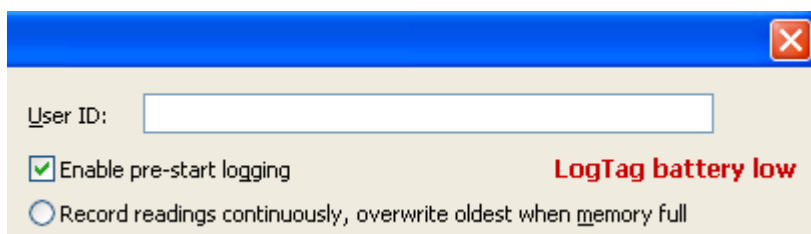
Function	Purpose
User ID	This can be used for identification of the load in transit to be monitored, or simply an identifier that describes the purpose of the monitoring. Bill of Lading information, Shipper, commodity, contact name and other relevant information can be placed here.

Start method	<p>This is used to determine how/when the LogTag will start recording its next set of readings.</p> <ul style="list-style-type: none"> Push button start When the 'Push button start' option is selected, the LogTag will start recording when the START MARK button has been pressed and held until both the OK and Alert lights alternately flash on and off. If pre-start recording is enabled, the LogTag will start logging pre-start readings immediately (see section "Pre start data collection" on page 41"). Date/Time start When the 'Date/Time start' option is selected, the LogTag will automatically start recording at the date/time defined in the subsequent field. Pressing the START MARK button prior to the start date/time will have no effect. There will be no pre-start readings recorded prior to the start date/time. Note: When using the Date/Time start option, the earliest start time that can be selected is two minutes after the current time. This delay allows you to complete the remaining configuration options and gives the software enough time to configure the LogTag before it starts. Push button start from hibernation When the 'Push button start from hibernation' option is selected, the LogTag will start as if programmed for 'Push button start'. The difference is that once the configuration is successfully downloaded to the LogTag it will be placed into hibernation. When the START MARK button has been pressed and held, the LogTag will wake from hibernation and start recording with the parameters as configured. Please note in this mode the real time clock inside the logger is not active. It is therefore vital that the computer on which the unit is downloaded is set to the correct time. Please see Prolonging battery life (see "Hibernation - Prolonging battery life" on page 48) for more information on Hibernation. <p>Not every LogTag model can support every start mechanism. As a result, specific options may not be listed when configuring a LogTag.</p>
Enable pre-start logging	<p>Pre-start logging is a feature that protects the recording in the event of a failure to actually press the START MARK button to initiate the recording. It is an insurance policy against the loss of critical data. This is almost always checked for transit monitoring applications. This option is further explained in the section Pre start data collection on page 41.</p>
Record readings continuously, overwrite oldest when memory full	<p>This is what is called a "data wrap" in which the recorder just keeps writing data to memory. It is a "moving window" of data. For example, this is useful for fixed base MKT monitoring with the interval set to one year, so that the current "yearly MKT" can always be in the memory of the LogTag. If this option is selected, the user will be "opted out" of the next two options. This option is further explained in the section Continuous operation (on page 42).</p>
Record readings so that:	<p>If this is selected, the logger stops logging when the number of data points has been gathered and stored in memory that spans at least the number of days specified below. When this option is selected, the following two options will determine the number of data points over the span of time that will be recorded.</p>
Readings recorded will span at least X days	<p>If you know how long you want to record, the Configuration screen will automatically set the number of readings to be collected at a particular interval. This setting will only have an effect if the above option "Record readings so that:" is selected.</p>

Number of readings to record X maximum is Y	This data box will display the calculated number of readings if you select a time span and an interval. Alternatively, you can select the number of readings desired, and the time span will be altered based on the interval. If this is selected, the logger will stop logging when the number of readings has been gathered and stored in memory. "Y" represents the maximum number of readings the LogTag can store, however with a selected interval and a selected time span, you may not need to use all of the available data space. This setting will only have an effect if the above option "Record readings so that:" is selected.
Record a reading every X	This determines how frequently the LogTag records the environmental humidity and/or temperature into its internal memory.
Begin recording after a delay of X	Determines how long after the START MARK button on the LogTag has been pressed that it will actually begin to record the environment humidity and/or temperature. This feature is useful for example, when the LogTag could falsely trigger an alert because the environmental conditions it is being started in is quite different to the environmental conditions to be monitored. If pre-start logging is enabled, the LogTag will continue to record pre-start readings during this delay.
Enable the OK (Green) indicator	This determines whether or not the green light should function while the LogTag is recording after being started.
Humidity / Temperature	These tab controls will allow the humidity and temperature alert conditions to be configured independently. These tab controls will only appear when configuring a LogTag that has a humidity and a temperature sensor. If the LogTag has only one sensor then the following alert conditions will apply to that sensor.
Configure requires a password	This feature allows the user to define a password that must be provided (see "Restricting Access" on page 27) to configure the LogTag next time. If this option is enabled and the password changes, the user will be required to verify the new password (see "Verify Access Password" on page 41) when the wizard progresses to the next step. Passwords are case sensitive and therefore the passwords "Bob" and "bob", for example, are different.
Download requires a password	<p>If this option is enabled, the LogTag's recorded data can only be downloaded after entering the correct password.</p> <p>Note: Only one password can be provided for each LogTag. The same password applies to the Configure and Download actions.</p>

Upgrade logger to enable this feature	<p>TRIX-8, TREX-8 and TREL-8 loggers which do not yet have the "Download requires a password" feature can be upgraded. These units will then require LogTag Analyzer revision 1.8r9 or later to be configured or downloaded, and an error message will be displayed in older versions.</p> <p>If LogTag Analyzer configures such a logger, an additional check box is displayed:</p>  <p>The "Download requires a password" is grayed out if the update has not previously been applied to the logger being configured. Once you tick the "Update logger to enable this feature" box, the "Download requires a password" check box becomes available for activation. You can then select the password functions for either configuration or download. The logger will be permanently upgraded as soon as the configuration is downloaded.</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ The update cannot be reversed. ▪ If the "Update logger to enable this feature" is ticked, the upgrade will perform, regardless whether any of the "...requires a password" tick boxes are enabled or not. ▪ If multiple units are configured at the same time using more than one interface, all units will be upgraded if the Upgrade option is selected. ▪ When the "Again" button is used with a different unit, that unit will also be upgraded. <p>Note: If a unit has been upgraded in a previous session, and is now configured using the "Download requires a password" function, units configured with the "Again" button in the same session will not automatically be upgraded; only those units that have already been upgraded separately in a previous session will have the "Password on download" function enabled.</p>
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If the battery within the LogTag is detected to be low and therefore not recommended for further use, the software will display a warning to you in the top right corner, like the following example.



Some LogTag[®] models display the remaining percentage in this screen once it falls below half capacity. Some models cannot be configured any longer once their battery capacity falls below a pre-determined threshold.

Alert Processing

The LogTag can display a visual alert if one or more of the configured alert conditions have been met. An alert condition can be a single alert reading (a reading outside of or including the upper and lower threshold values), a combination of consecutive alert readings or a total of alert readings encountered during the trip.

The threshold parameters are identified in LogTag Analyzer when the LogTag's readings are downloaded and displayed.

Please note that matching these to known conditions of interest in your monitoring program may require some information about the effects of exposure to different durations of out-of-range humidity and/or temperatures.

As with the other logging parameters these are adjusted in the "Configure LogTags for use" screen.

The screenshot shows the 'Configure LogTags for use' screen with the following settings:

- ☒ Enable the Alert (Red) indicator, when:
 - Readings below or above °C.
- ☒ After consecutive alert readings (210 Seconds)
- ☒ After alert readings have occurred (5 Minutes)
- ☒ Leave alert indicator enabled even if readings return within alert range
- ☐ Clear and reset alert when START MARK button pressed

The following table describes each configurable option.

Function	Purpose
Enable the Alert (Red) indicator when	This determines whether or not the red light should activate when an alert condition has been detected. An alert occurs when one or more of the conditions described below have been met. When an alert condition has occurred, this indicator will flash at a regular interval.
Readings below X or above Y (inclusive)	<p>You can set the upper threshold limit and lower threshold limit by entering the appropriate information in the boxes. If readings stay inside the range specified by X and Y the alert indicator will not activate. If a reading of X and below, or Y and above is recorded, the alert indicator may light up, dependent on the alert conditions. Charts will display alert readings according to the settings made in the Charts (on page 100) section of the 'Options' Screen.</p> <p>Note: The values entered in these boxes are included in the alert range. In the above example 7 consecutive readings of 45°C will trigger an alert, whereas 7 consecutive readings of 44.9°C will not trigger an alert. Please set your alert values with this in mind.</p>

After X consecutive alert readings (W minutes)	<p>Tick this box, and enter a number into the adjacent field if you want to trigger an alert condition once X number of consecutive alert readings are recorded. Note that the number of minutes shown will depend on the number of alert readings you enter into the box AND the recording interval already specified. For example, if X is 3 and two readings are above the upper threshold limit but the subsequent reading is below the upper threshold limit and still above the lower threshold limit then the alert indicator will not activate. Maximum value is 256, minimum is 2.</p>
After X alert readings have occurred (W minutes)	<p>Tick this box, and enter a number into the adjacent field if you want to trigger an alert condition once a total number of alert readings have been recorded, regardless of whether they are consecutive or not. Maximum value is 256, minimum is 2.</p> <p>You can increase or decrease the values with the arrows next to the fields. Please note these are linked and certain combinations may not be allowed.</p>
Leave alert indicator enabled even if readings return within alert range	<p>If this option is enabled then the alert indicator will remain active, even if the current reading does not meet the alert conditions specified by the previous controls.</p> <p>If this option is disabled then the alert indicator will remain active only if the current reading meets the alert conditions specified by the previous controls.</p> <p>Please note, however, that this setting is only applicable if an immediate alert is configured; if consecutive or accumulative alert settings are configured this box has no effect, and the alert indicator will always remain visible once an alert has occurred.</p>
Clear and reset alert when START MARK button pressed	<p>If this feature is enabled, any user can turn off an active alert by pressing the LogTag's START MARK button. It will also reset the internal alert counters such that it would be as if no alert condition had occurred at all while the LogTag was recording.</p> <p>Should the LogTag subsequently detect a further alert condition, the alert will activate again.</p> <p>Once the LogTag has finished recording, pressing the START MARK button will not clear and reset any active alert.</p> <p>If the LogTag being configured does not support this feature, it will be disabled and its setting cannot be changed.</p>

Example:

You wish to configured a LogTag so alert conditions are indicated if 5 continuous readings are out-of-range or 7 total readings are out-of-range. Alert parameters should be set as follows:

☒ After consecutive alert readings (5 Minutes)

☒ After alert readings have occurred (7 Minutes)

☒ Leave alert indicator enabled even if readings return within alert range

This table shows how different conditions would result in the Alert Indicator flashing or not:

What the LogTag recorded	What the LogTag indicated
2 readings out-of-range, return to normal, 2 readings out-of-range, return to normal, 2 readings out-of-range, return to normal	Neither alert condition is met. The maximum number of consecutive out-of-spec readings is only 2 (5 required.) The total out-of-range events equals $2 + 2 + 2 = 6$. The alert condition is 7 total, so the alert does not go off. No Flashing Red Alert Indicator
4 readings out-of-range, return to normal, 4 readings out-of-range	The first alert condition is not met, as the the maximum number of consecutive alert condition readings is only 4 (5 required.) The second alert condition however IS met since the total alert condition readings equals $4 + 4 = 8$. The alert condition is 7 total. so the alert DOES go off. Flashing Red Alert Indicator
4 readings out-of-range, return to normal, 2 readings out-of-range	Neither alert condition is met. The maximum number of consecutive alert condition readings is only 4 (5 required.) The total number of alert condition readings equals $4 + 2 = 6$. The alert condition is 7 total, so the alert does not go off. No Flashing Red Alert Indicator
6 readings out-of-range, return to normal	The second alert condition is not met, as the total out-of-range events equals 6 (7 required.) The maximum number of consecutive alert condition readings however is 6, the alert condition is 5 consecutive readings, so the alert DOES go off. Flashing Red Alert Indicator

Please note following special conditions:

1. If you wish an alert to be indicated on the first reading that is recorded out-of-spec, place a tick in the box next to "Enable the Alert (Red) indicator when" and remove the ticks in both boxes next to the "After X consecutive alert readings" and "After X alert readings have occurred".

2. You can not enter a number into the "After X consecutive alert readings" field which is larger than the number in "After X alert readings have occurred", since the latter alert condition would always be met first.

3. Similarly, you can not enter a number into the "After X alert readings have occurred" field which is smaller than the number in "After X consecutive alert readings". The software will adjust field values as appropriate.

Advanced Alert Settings

Some LogTags support more detailed alert settings than described before. If LogTag Analyzer encounters one of these loggers, an additional [Advanced >>](#) button is visible in the bottom left of the configuration screen.

When this button is pressed, the alert configuration screen changes and displays additional settings:

Enable the Alert (Red) indicator, when:

- ☒ Readings above °C.
- ☒ Readings below °C.
- ☐ After consecutive alert readings (None)
 - ☐ Readings above
 - ☐ Readings below
- ☒ After alert readings have occurred (1 Minute)
 - ☒ Readings above
 - ☒ Readings below

The red alert indicator can now be configured independently for upper and lower alert values.

Function	Purpose
Readings above X Readings below Y (inclusive)	In addition to entering the threshold levels, tick the boxes next to "Readings above" or "Readings below" to enable the alert conditions for only the upper or only the lower threshold settings, or for both. If both boxes are ticked, the behaviour is the same as for the standard alert settings. The charts will display alert readings according to the settings made in the Charts (on page 100) section of the 'Options' Screen.
After X consecutive alert readings (W minutes) Readings above Readings below	Tick the boxes next to "Readings above" or "Readings below" to establish whether only readings above and including the upper threshold or only readings below and including the lower threshold should count towards the consecutive alert readings. If both boxes are ticked, the behaviour is the same as for the standard alert settings. If the Alert Indicator is disabled for either the upper or the lower alert, the respective box for the consecutive alert is grayed out and cannot be ticked.

After X alert readings have occurred (W minutes) Readings above Readings below	Tick the boxes next to "Readings above" or "Readings below" to establish whether only readings above and including the upper threshold or only readings below and including the lower threshold should count towards the total number of alert readings. If both boxes are ticked, the behaviour is the same as for the standard alert settings. If the Alert Indicator is disabled for either the upper or the lower alert, the respective box for the alert total is grayed out and cannot be ticked.
--	---

The advanced settings are displayed automatically without the need to press **Advanced >>** if an advanced configuration is already found in the logger to be configured. If you do not wish to use the advanced settings, press **<< Simple**, and the standard [Alert Processing](#) (on page 33) configuration screen is displayed.

Example:

You wish to configure a LogTag so an alert is displayed if 5 continuous readings are out-of-range or 7 total readings are out-of-range, but only if the temperature goes to 20°C and above. You wish to see in LogTag Analyzer if the product has gone to 0°C and below, but you do not wish to trigger an alert for this condition. Alert parameters should be set as follows:

This table shows how different conditions would result in the Alert Indicator flashing or not:

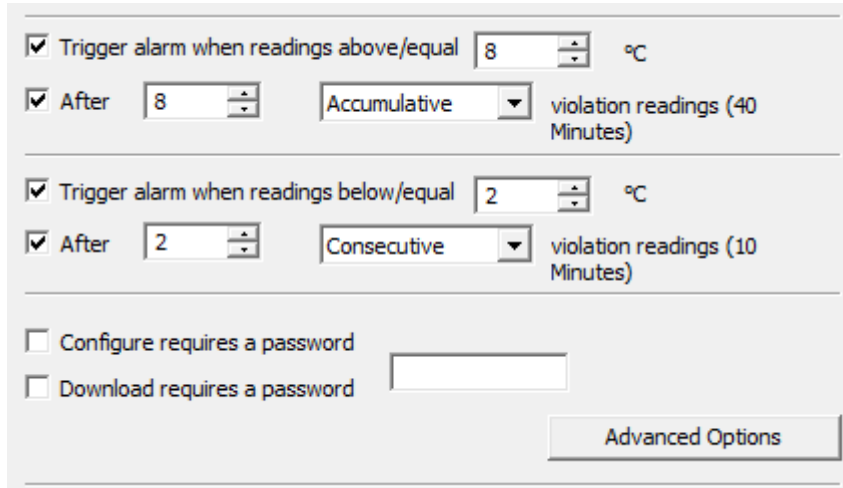
What the LogTag recorded	What the LogTag indicated
2 readings of 20°C or above, return to normal, 8 readings at 0°C or below, return to normal, 4 readings of 20°C or above, return to normal	<p>Neither alert condition is met.</p> <p>The maximum number of consecutive out-of-spec readings is only 2 (5 required, the 8 readings below 0°C do not count towards alert readings).</p> <p>The total out-of-range events equals $2 + 4 = 6$. The alert condition is 7 total, so the alert does not go off, as again the 8 readings below 0°C do not count towards alert readings.</p> <p>No Flashing Red Alert Indicator</p>

4 readings of 20°C or above, return to normal, 4 readings of 20°C or above	The first alert condition is not met, as the the maximum number of consecutive out-of-spec readings is only 4 (5 required.) The second alert condition however IS met since the total out-of-range events equals $4 + 4 = 8$. The alert condition is 7 total. so the alert DOES go off. Flashing Red Alert Indicator
--	--

Separate alert conditions are useful if you expect the monitored product to encounter temperatures lower than the lowest possible alert temperature. In this case a flashing alert indicator may not necessarily indicate an unfavourable condition was encountered. In programs where such conditions are monitored the lower alert should be turned off.

Display Logger Alarms

TRID30-7 and TRED30-7 loggers have a different settings screen.



The screenshot shows a settings window for displaying logger alarms. It contains two main sections for temperature ranges. The first section is for readings above or equal to a specified temperature. The second section is for readings below or equal to a specified temperature. Both sections have checkboxes for 'Trigger alarm', 'After', and 'violation readings'. The 'After' checkbox is checked in both sections, and the 'violation readings' checkbox is also checked. The 'violation readings' dropdown menu is set to 'Accumulative' for the first section and 'Consecutive' for the second section. There are also checkboxes for 'Configure requires a password' and 'Download requires a password', both of which are unchecked. A text input field is present next to the 'Download requires a password' checkbox. An 'Advanced Options' button is located at the bottom right of the window.

☒ Trigger alarm when readings above/equal 8 °C

☒ After 8 Accumulative violation readings (40 Minutes)

☒ Trigger alarm when readings below/equal 2 °C

☒ After 2 Consecutive violation readings (10 Minutes)

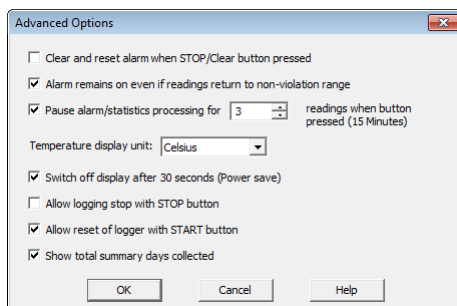
☐ Configure requires a password

☐ Download requires a password

Advanced Options

The settings are similar to the [Advanced Alert Settings](#) on page 36, hence they are not explained again here. There is however one notable exception; for each range (above or below) you can only select either accumulative or consecutive readings, but not a combination of both. This does however give you the option to select e.g. a different number of cumulative readings for above and below ranges.

In this screen you can also see an [Advanced Options](#) button. When clicking this button, following configuration screen is displayed, allowing you to enter parameters specific to TRID30-7 and TRED30-7 loggers.



The screenshot shows the 'Advanced Options' configuration screen. It contains several checkboxes for advanced settings. The 'Clear and reset alarm when STOP/Clear button pressed' checkbox is unchecked. The 'Alarm remains on even if readings return to non-violation range' checkbox is checked. The 'Pause alarm/statistics processing for' checkbox is checked, with a value of 3 and a unit of 'readings when button pressed (15 Minutes)'. The 'Temperature display unit' dropdown menu is set to 'Celsius'. The 'Switch off display after 30 seconds (Power save)' checkbox is checked. The 'Allow logging stop with STOP button' checkbox is unchecked. The 'Allow reset of logger with START button' checkbox is checked. The 'Show total summary days collected' checkbox is checked. There are 'OK', 'Cancel', and 'Help' buttons at the bottom of the window.

Advanced Options

☐ Clear and reset alarm when STOP/Clear button pressed

☒ Alarm remains on even if readings return to non-violation range

☒ Pause alarm/statistics processing for 3 readings when button pressed (15 Minutes)

Temperature display unit: Celsius

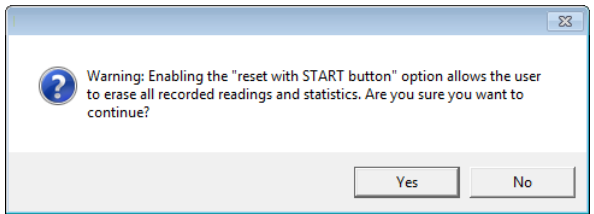
☒ Switch off display after 30 seconds (Power save)

☐ Allow logging stop with STOP button

☒ Allow reset of logger with START button

☒ Show total summary days collected

OK Cancel Help

Function	Purpose
Clear and reset alarm when STOP/CLEAR button pressed	<p>If this option is enabled, any user can turn off an active alarm directly on the LogTag by pressing the STOP/CLEAR button. This will turn off the alarm symbol and reset the internal counters as if no alarm had occurred while the LogTag was recording. When the LogTag subsequently registers a further alarm condition, the alarm will activate again. Once the LogTag has finished recording, pressing the STOP/CLEAR button will not clear and reset any active alarm.</p> <p>An alarm will always be registered in the day summary and cannot be cleared, regardless of whether the alarm symbol was cleared or not.</p>
Alarm remains on even if readings return to non-violation range	<p>If this option is enabled then the alarm symbol will stay on, even if the current reading does not meet the alarm conditions specified by the previous controls. If this option is disabled then the alarm symbol will stay on only if the current reading meets the alarm conditions specified by the previous controls.</p> <p>Unlike for units without a display these settings also apply if consecutive or accumulative alert settings are configured. If the Alarm conditions are no longer met, all counters are re-set and an alarm is triggered when the alarm condition is met again. In any case, an alarm will be registered in the day summary, regardless whether conditions re-set or not.</p>
Pause alarm/statistics processing for X readings	If this option is enabled, pressing either button on the LogTag while recording excludes the next reading from the alarm and statistics calculations; PAUSED will now be shown on the display. This allows the user to review the statistics or clear an alarm without causing an invalid reading, alarm or statistic.
Switch off display after 30 seconds	If this option is enabled, the display will turn off after 30 seconds to save battery power.
Allow logging stop with STOP button	If this option is enabled, the LogTag can be stopped by pressing the STOP button. The recorder will no longer take any readings, however you can still review the day statistics and download the logged results to a PC with LogTag Analyzer.
Allow reset of logger with START button	<p>If this option is enabled, TRID30-7 and TRED30-7 loggers can be re-activated and used again for a new trip by pressing the START button.</p> <p>When re-activating the recorder, all previously recorded readings and statistics will be erased!</p> <p>When this option is enabled, a warning box will be displayed to remind you this is enabled and can result in loss of data.</p> 
Show total summary days collected	If this option is enabled, the LogTag shows the number of days for which statistics have already been collected on the display.

Please refer to the *LogTag® product specification & guide for TRID30-7 and TRED30-7 recorders* on the LogTag Recorders website at <http://www.logtagrecorders.com> for a detailed description of the functionality of these products.

Note: When referring to TRID30-7 and TRED30-7 products, versions with both the fixed (F-suffix) and replaceable (R-suffix) battery are included.

Verify Access Password

If the "[Configure requires a password](#) on page 25" option was enabled or the password was changed during the configuration process the user is required to verify the password before it will be stored in the LogTag. A window similar to this will appear:



Once a password has been stored in the LogTag, further access to it can only be achieved by providing the correct password. Therefore, if a password is forgotten further access to the LogTag will not be possible. Passwords are case sensitive and therefore the passwords "Bob" and "bob", for example, are different.

Pre-start data collection

The LogTags support a feature called "pre-start logging", which can be selected during configuration.

When pre-start logging is enabled the LogTag will automatically start logging as soon as configuration is completed. It will record at the same sampling interval as defined in the configuration and will continue to record until the user starts the LogTag by pressing the START MARK button on the LogTag. Once the LogTag has been started, it will record as per the configuration settings. While the LogTag is recording pre-start readings the Alert LED on the LogTag will not activate if an alert condition is detected.

Pre-start logging is useful as a fail-safe recording setting so if the LogTag is not started at the appropriate time, the readings will still be available to view later. When the readings are retrieved from the LogTag, any pre-start readings will be identified as pre-start readings so the user can quickly identify the readings recorded before and after the LogTag was started.

All LogTags have a finite amount of memory to store the readings it records. Therefore, while the LogTag is recording pre-start readings the LogTag will operate in its 'continuous operation' mode, which is explained further in the section "[Continuous operation](#) (on page 42)". Once the memory within the LogTag is full the oldest pre-start reading will be overwritten with the latest reading recorded, regardless of whether the reading recorded is a pre-start reading or a reading to be recorded after the LogTag has been started.

If a LogTag has been configured to start recording at a certain date/time, or for push button start from hibernation, no pre-start readings will be recorded.

Continuous operation


All LogTags have a finite amount of memory to store the readings that are recorded. When the LogTag is recording readings continuously it will not stop once the memory within the LogTag is full of readings. Rather it will replace the oldest reading stored within the LogTag with the latest reading so that only the most recent readings are maintained in the LogTag's memory.

If the LogTag being configured does not support this feature, you will not be able to select this setting."

Working with batches of LogTags

You may find that at some stage you need perform a similar task on multiple LogTags, whether it is retrieving readings stored within the LogTags and/or preparing them for their next use. The LogTag Analyzer software has been designed to make the effort involved with multiple LogTags as simple as possible.

To retrieve a copy of the recorded readings stored within multiple LogTags, simply insert each LogTag to download into the Interface cradle. The software will then automatically retrieve the recorded data from the LogTag, save it to disk and then display the information for you. Therefore, you will be able to retrieve the recorded readings stored from within one or more LogTags without needing to interact with the software and/or computer.

To prepare multiple LogTags for use you can use the "Wizard..." or the "Configure..." wizard, available in the "LogTag" menu, depending on whether or not you want to retrieve and save a copy of any readings recorded within the LogTags you are about to use. Simply prepare the first LogTag(s) as per usual and at the conclusion of the last step remove the LogTag(s) from their Interface Cradle, place the next LogTag(s) to be prepared for their next use into an Interface Cradle and click . Therefore, you will be able to prepare multiple LogTags for use with minimal interaction with the software and/or computer.

Getting the best from your LogTag

Many users of humidity and/or temperature loggers are used to attaching the logger to a hook or tie-wrapping them to a monitored object. A wide variety of attachment methods can be used with the hole on upper right hand corner of the LogTag, such as bolting the LogTag in position, attaching it to a packaging strap, using a car-seal for security or other means.

The hole is quite strong, so most means of attachment will not compromise the structural integrity of the LogTag. We do, however, recommend that the dead weight stress on the hole itself not exceed 5 pounds (2 Kg).

The sensor for the LogTag is also very responsive, so we recommend you position the LogTag in a location, where it will not be susceptible to changes in temperature due to operational activities. For example, it is not recommended you place a LogTag beside a door way, as every time someone passes through the door, the LogTag will register the change of environmental

temperature due to the breeze that will be generated by the person, which does not necessarily reflect the overall temperature of the environment been monitored.



Configuration Profiles

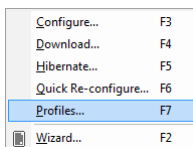
Starting with version 2.2 LogTag Analyzer provides a great way to make the task of configuring loggers over and over with the same parameters a lot simpler.

For every logger type multiple configuration profiles can be stored and retrieved later. These configuration profiles hold information such as alert limits, logging interval, number of readings to record and most of the other parameters you would typically enter during configuration.

Configuring a logger with a given profile requires only three steps:

- 1 Access the "Profiles" function from the LogTag menu
- 2 Select the profile you wish to use in the Configuration Profiles main window
- 3 Click on configure

The "Configuration Profiles" window is accessed through the **LOGTAG** menu by selecting **PROFILES**.



The window that is now displayed gives you an overview of the profiles already installed as well as some controls so you can add, edit and delete profiles.

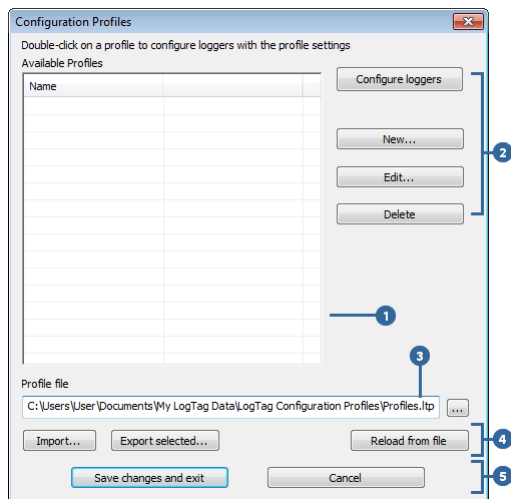


Figure 7: Profile main window

- 1 - Profile grid
- 2 - Profile control buttons
- 3 - Profile storage file path and name
- 4 - Profile file controls
- 5 - Dialogue controls

Profiles Grid

When you first select this feature the profiles grid will be empty (just like above). You will fill the grid by adding profiles or importing profiles.

Name	Model
Pool water	TRED
Onions	HAXO
Ice Cream	TRIX
Oranges	SRIC
Pool Water (Infants)	TRED
Flowers (Tulips)	HAXO
Flowers (Roses)	HAXO


Figure 8: Profiles grid

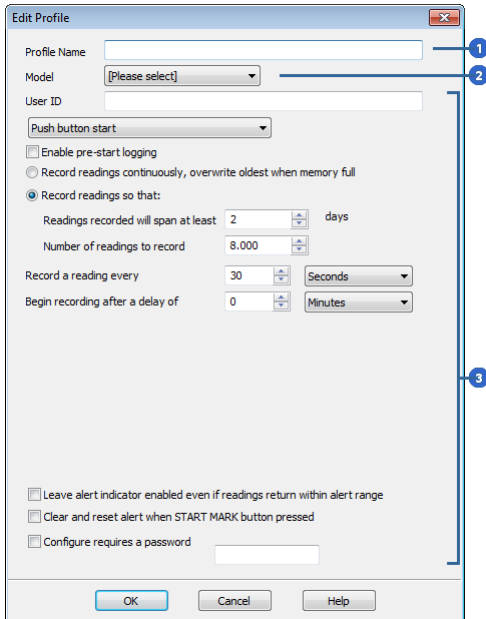
Profiles from the grid can then be used to configure loggers. A single click on the column title will sort the profile using this column. Double clicking on a profile will configure all loggers currently in connected interfaces using the parameters stored in the configuration profile. You can select multiple profiles for export or deletion when you hold down the **CTRL** key while clicking, but you cannot edit or apply more than one profile at the same time.

Profile Control Buttons

Selecting the "Configure loggers" button will configure all loggers currently in connected interfaces using the parameters stored in the configuration profile highlighted in the grid (this is the same as double clicking on the profile name).

Use the control buttons to add new profiles, and to edit or delete existing profiles.

Clicking the  button will bring up the "Edit Profile" window.



The "Edit Profile" window is a dialog box with a title bar and a close button. It contains the following fields and controls:


- Profile Name:** A text input field at the top, marked with a blue circle 1.
- Model:** A dropdown menu below the profile name, marked with a blue circle 2.
- User ID:** A text input field below the model dropdown.
- Start Method:** A dropdown menu with "Push button start" selected.
- Logging Options:**
 - ☐ Enable pre-start logging
 - ☐ Record readings continuously, overwrite oldest when memory full
 - ☒ Record readings so that:
 - Readings recorded will span at least:** A numeric input field with "2" and a "days" unit dropdown.
 - Number of readings to record:** A numeric input field with "8,000".
 - Record a reading every:** A numeric input field with "30" and a "Seconds" unit dropdown.
 - Begin recording after a delay of:** A numeric input field with "0" and a "Minutes" unit dropdown.
- Alert and Security Options:**
 - ☐ Leave alert indicator enabled even if readings return within alert range
 - ☐ Clear and reset alert when START MARK button pressed
 - ☐ Configure requires a password: A text input field.
- Buttons:** "OK", "Cancel", and "Help" at the bottom.




A blue line with a blue circle 3 at the end indicates the configuration parameters section.

Figure 9: New Profile Window

- 1 - Profile name
- 2 - Recorder model
- 3 - Configuration parameters

This window contains all the controls you can find in the configuration window, plus one entry field at the top where you need to enter the new name of the profile, and a drop down box where you need to select the model type of the logger.


The same window will be displayed when you press the  button. Every entry field is now populated with the saved value for this profile. Any entry field can be edited, with the exception of the model type.

You can click  to save the profile,  to discard any changes, and also bring up the help screen for this window by selecting .

Profile Storage File Name and Path

The collection of profiles displayed in the profiles grid is saved in a single file on your PC, which is called the profile file. This file is typically stored in a folder called "LogTag Configuration Profiles" inside the "My LogTag Data" folder. Every time you open LogTag Analyzer this profile file is activated.

You can select alternative collections by opening different files. This can be useful if for example you want to keep different profiles for different customers, or you prefer to separate and organise your profile collections.



You can click on the  button and select a different profile file. If you have unsaved changes you will be asked to confirm if you want to first save these changes. An explorer window will then open, where you can select a new profile file.

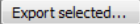

Note: To create a new profile file, export one or more profiles to a new profile file. You can then open the new profile file and add, edit or delete profiles as usual. Alternatively, you can

download an empty profile file template from
http://www.logtagrecorders.com/download/document/Blank_Profile.ltp.

Profile File Controls

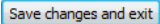

If you have stored your profiles in different profile files, you can transfer data between different files with the import and export buttons.

When you click on the  button, an explorer style window will open. Select the profile file from which profiles will be imported and confirm your selection by clicking on . All profiles from the selected profile file will be imported into the currently active profile. If a profile is imported that has the same name as an already active profile, you need to confirm whether you wish to skip the import of this profile or overwrite the active profile with the imported profile.

You can export selected profiles to a new file by highlighting a profile and clicking the  button. An explorer style window will open, where you can enter a new profile file name (the file will be created when you press ) , or overwrite an existing profile. If a profile is exported, and a profile file already exists, you need to confirm whether you wish to cancel the export of this profile or overwrite the profile file. You can export more than one file at the same time by selecting the desired files while holding down the **CTRL** key.

You cannot amend a profile file by exporting a profile.

Profile Window Controls

Clicking  will store the profile in the location entered above. Clicking on  will discard any changes and return you to the main window.

Please note there are some restrictions when you work with configuration profiles:

Configuration profiles cannot use the date/time start mechanism. If a defined start time were to be applied to a profile, this time would most likely have passed by the time the profile The time , since this would be different for every time the profile is applied. If you need to configure a number of loggers and you want then all to stat at the same time you should use the standard configuration screen and the Again button.

You cannot configure one type of logger model with a profile written for another model.

You cannot have multiple profiles with the same name.

If you have exported a profile to a profile file, cancelling the main edit window will not undo the changes.

If you try to apply a profile to a recorder with a password protected configuration, this same password must be provided in the profile. There is no separate password confirmation dialogue.

Loggers that can be upgraded to use a download password will automatically be upgraded when a profile is applied using this feature.

Sometimes a logger cannot be configured using a particular profile. In this case one of the following errors will be displayed:

"Logger does not support advanced alert settings"	You have selected a profile which has separate upper and lower alert settings, but the logger you wish to configure does not support this. You will need to use a different profile, or use a different logger if this feature is important for this trip.
"Logger cannot record more than X readings"	You have selected a profile that requires the logger to take more readings than fit into its memory. You will need to use a different profile, or use a different logger if this feature is important for this trip.
"Password in profile does not match logger password"	You have selected a profile with a password, and the password currently stored in the logger is different. You will need to use the normal configuration process to remove the password; after that you can use the profile function to configure the logger with the new password. If the logger does not allow the password to be changed, you will need to use a different profile.
"A password cannot be applied to this logger"	You have selected a profile with a password, but the logger is factory configured so the user cannot change or enter a password. You will need to use a different profile that doesn't have a password protection, or use a different logger if this feature is important for this trip.
"Logger only supports latched master alarm"	Loggers typically can have a setting applied that allows an alarm to reset if conditions go back to within specification. Some older TRID30-7 loggers do not support this feature, and if you attempt to configure such a logger with a profile using this setting you will see this error. You will need to use a different profile or use a later model TRID30-7 if this feature is important for this trip.
"Profile logger type does not match"	You are trying to configure a unit with a profile that was created for another model. A profile is specific to a logger model, so you will need to use a different profile.
"Lease expired. The max. number of starts has been reached."	You are trying to configure a unit which has no more trips left. You will need to use a different logger.

Quickly re-configuring LogTags

You can now configure a LogTag[®] recorder without first displaying the configuration screen. To do this, you can use the "Quick Re-Configure" function from the LogTag menu, and you will see the "Upload configuration" screen where a recorder will simply be re-configured with the settings used for the previous trip.

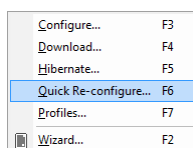


Figure 10: Quick Re-configure option through menu

You can also use the "F6" function key.

There are certain rules when using this function:

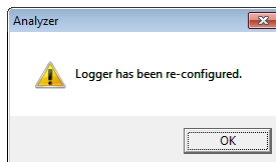
- You can use multiple interfaces. Each LogTag detected in an interface is re-configured with the same data used for its previous trip. Recorders do not have to be of the same model, and can each have different configuration settings.

- Re-configuration is only possible for recorders which used the "Push button" or the "Push button from hibernation" start method for their previous trip. If the recorder's previous trip was started by the date/time start method the quick re-configure option will result in an error message being displayed.
- If a recorder requires a password for configuration you will be requested to provide this password. If you enter an incorrect password, the configuration process will be aborted.
- If the LogTag is still logging when you reconfigure it, you will be asked to confirm whether or not you wish to stop the current trip.

Automatic Re-Configuration after Download

To re-configure a recorder even faster you can now use the "Re-configure with same settings after automatic download" option.

When you have enabled this option in **EDIT - OPTIONS - AUTOMATION**, a LogTag is automatically re-configured with the same settings as the trip just completed once its data have been downloaded (see [Automation](#) (on page 101)). You will receive the following feedback once the configuration is complete:



Please note this option only works when a LogTag is automatically downloaded when inserted into the interface, i.e. the "Enable automatic download of readings from LogTags" option must be enabled, and the download triggered by inserting the recorder into the interface. This does not apply when the LogTag is downloaded through the menu of by pressing F4.

A word of caution: If the LogTag you have downloaded does not have a configuration password and has also finished logging, the only visual feedback on the PC will be after the recorder has already been re-configured for a new trip. You will only be able to access the data from the trip just downloaded on the PC, but not within the recorder. Therefore it is important you make sure the file location for storing data is always accessible to avoid loss of data.

Hibernation - Prolonging battery life

If your LogTag is not going to be used for extended periods of time, you should set it to "Hibernation". While in "Hibernation" the LogTag will consume minimal power, which will extend the battery life when compared with leaving an idle LogTag operating.

While a LogTag is in "Hibernation" it will:

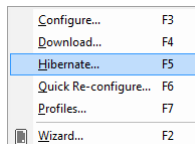
- Not record and store any new readings.
- Not activate the Alert and OK lights.

- Not respond to the START MARK button being pressed.

The only exception is when the LogTag has been configured for 'Push button start from hibernation' in the configuration screen. In this case pressing the START MARK button will 'wake' the product and commence logging according to the configured settings. Not every model supports this feature.

To 'wake' a LogTag from "Hibernation" to normal operation go through the usual process of [preparing it for next use](#) (see "Preparing LogTag(s) for use" on page 25).

To set a LogTag to "Hibernation", select **HIBERNATE...** from the **LOGTAG** menu.



You can also use the **F5** function key.

The following example illustrates using the "Hibernation" feature.

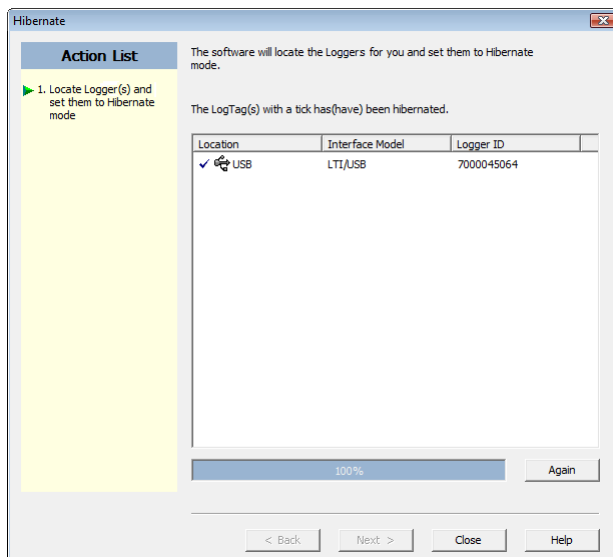


Figure 11: Hibernating a recorder

In this screen you will see one of the following pictures next to each of the items in the list:

- (no picture) indicates the LogTag is still in the process of being hibernated.
- ✓ The LogTag was successfully set to hibernation.
- ✗ The software was unable to set the LogTag to hibernation.

Once a LogTag has been successfully set to "Hibernation" it should be removed from the Interface Cradle before pressing any other button. As soon as the software communicates with a LogTag in "Hibernation", (for example through automatic download it will be returned to normal operation.

The extent to which the Hibernation will prolong the battery life of a LogTag may vary between different models and versions of LogTag products. Some LogTag models may not support Hibernation.

CHAPTER 5

Results from LogTag

For most LogTags you will want to view the recorded information once a trip has been completed. For this, you can use the LogTag Analyzer software and an Interface Cradle to transfer the information from the LogTag to a PC. The software will automatically save any downloaded trip information retrieved from a LogTag to your disk drive so that you can view the information and archive it.

This chapter explains how you can retrieve the recorded information and have the software display it to you on the screen in a meaningful way.

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Automatically calculated statistics	82
Displaying statistics.....	86
Printing the results	87
Sending a file by e-mail direct from Analyzer	88
Calling up previous results.....	89
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Getting results from LogTag

LogTag products store all readings in non-volatile memory. You can retrieve the recordings as many times as you require, as long as the recorder is not re-configured. The process of retrieving data stored within a LogTag does not in itself erase the data from the LogTag's memory, however if you have turned on the "Automatically re-configure..." option you will no longer be able to access the data inside the recorder once this process has finished; rather you must rely on the stored file to access such data.

If the LogTag is currently recording while you retrieve the information, it will continue to record without interruption. If the recorder is in the process of taking a log you may see a slightly longer download time as communication pauses to allow the log to be taken.

There are three ways to retrieve the recorded results from a LogTag:

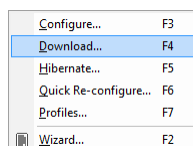
- Slot the LogTag into the interface cradle while the LogTag Analyzer software is running (this can be in the background, or even minimized). If the automatic download feature is enabled, the software will automatically retrieve the recorded readings, save the information to your disk drive and display the information to you. While the software is automatically retrieving the readings you will see an animation, similar to the following picture.




Figure 12: Downloading a LogTag Recorder

You can also enable the option to automatically re-configure the LogTag with its current settings (see [Automatic Re-Configuration after Download](#) on page 48).

- Click **DOWNLOAD...** from the **LOGTAG** menu.



You can also press the **F4** function key.

- Click the LogTag icon () on the toolbar or click on **WIZARD...** from the **LOGTAG** menu.

The wizard will guide you through the necessary steps to retrieve the readings stored in the LogTag and then offer to prepare the LogTag for its next use. If you do not need to configure the LogTag at this time you can cancel the process, however if you do not intend to configure units directly after downloading you may find it quicker to use the previous option.

Note: While the wizard is visible the "Automatic download" feature will be temporarily disabled. You will not be able to access any of the Wizards while an "Automatic download" is in progress.

Saving LogTag Data

Saving LogTag Data files

Every time you download a LogTag Recorder to your computer the data are automatically saved to a file with a *.ltd file extension (LogTag® Data). This type of file is unique to LogTag data loggers and can only be read by LogTag Analyzer software.


You can customise the conditions for which the file is generated in the **EDIT - OPTIONS** window:

- You can determine the file's name by specifying the key details about the logger it was downloaded from ([File Name](#) on page 113)
- You can decide if existing files with older data should be overwritten or kept ([Uniqueness](#) on page 116)
- You can automatically have files sent to e-mail recipients and FTP sites ([Automation](#) on page 101)
- You can decide which additional other file formats are created ([Exports and Reports](#) on page 117)

You can also save all or part of the data in other files to make them accessible to other users ([Selected LogTag® files](#) on page 54 and [PDF files](#) on page 56).

Please refer to the respective sections in this user guide for more information.

Saving a Multi Chart file


If the main LogTag Analyzer window currently displays a Multi Chart as explained in [Combining charts onto a single chart](#) (on page 76), you can save the current configuration by clicking on the  toolbar icon or selecting **SAVE** from the [File menu](#) (on page 125). Select a file name and location for your Multi Chart file. The file extension for Multi Chart files is "*.multi".

A Multi Chart file does not contain any recorded data. Instead, it contains a collection of information that describes which data files need to be opened, and in which relation to each other the data inside these files should be displayed, such as chart colors and time offset when [Shifting chart start times](#) (see "Combining charts onto a single chart" on page 76).

Therefore, if any of the data files referenced in a Multi Chart file are renamed, deleted, or moved to a different folder, this Multi Chart file will display error messages.

A Multi Chart file must be saved in the same folder as the individual data files. It is not sensible to store relative path information inside the file, as it would make it difficult to e-mail a Multi Chart file if the recipient would have to re-create the exact folder structure as the sender for the file to be displayed.

Any annotations added to the Multi Chart display are saved in a separate annotation file with the file extension ".anno". This file must be located in the same folder as the Multi Chart file to be included in the Multi Chart display.

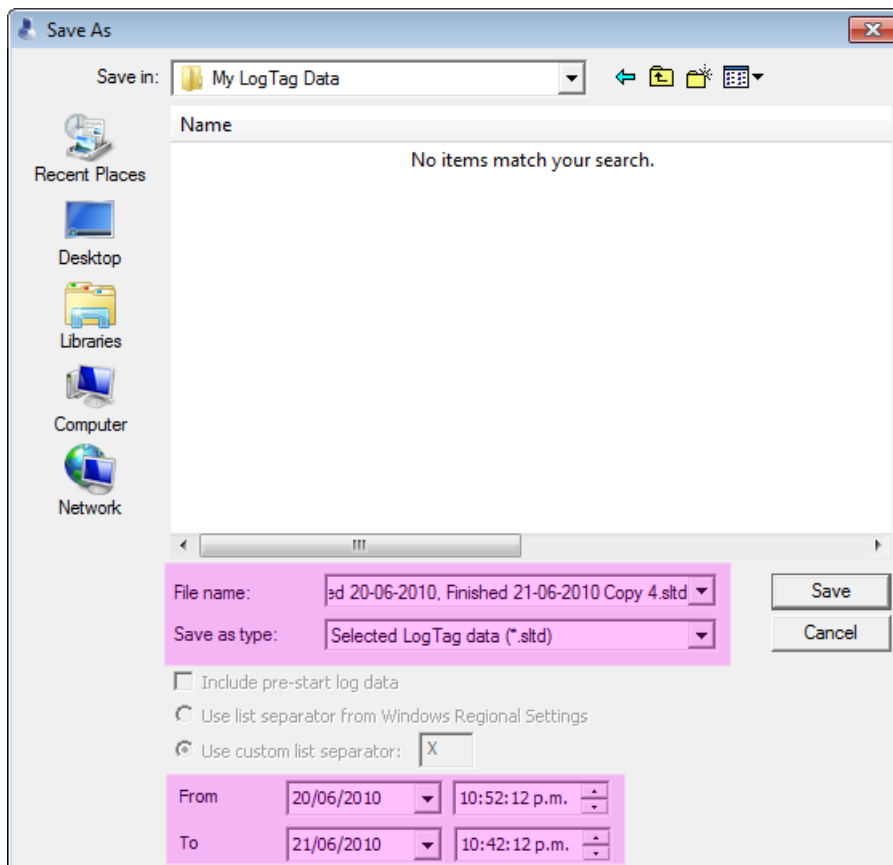
To open a previously saved Multi Chart configuration file, click on the  toolbar icon or select **OPEN...** from the **File menu** (on page 125), then select the "*.multi" file to be opened.

To save a Multi Chart file under a different name, select the **Save As...** command from the **File menu** (on page 125) and enter a new file name.

Note: You cannot export a Multi Chart file as a different file type.

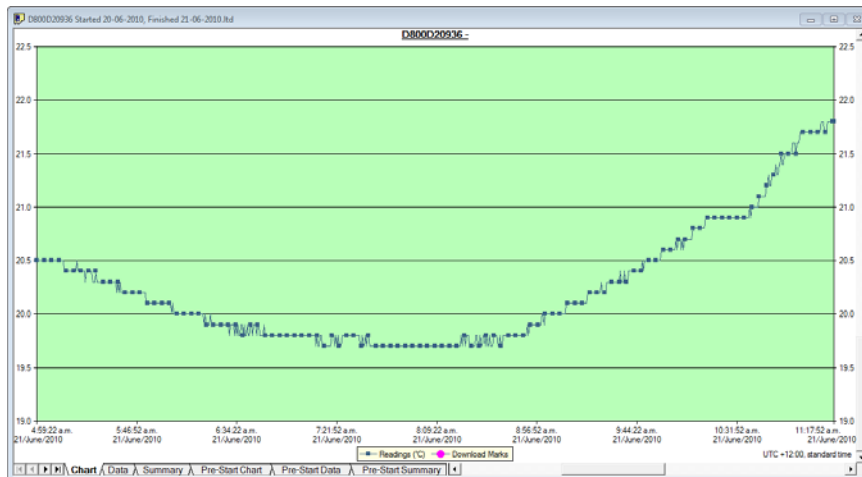
Selected LogTag® Data files (*.sltd)

Users can save a file, which when opened again, will only display a selected time window of the recorded data. The time window of this "Selected LogTag® Data" file is defined through the zoom settings of the currently active tab, or can be entered in the dialog box displayed when the "Save as..." command from the **File menu** (on page 125) is chosen with 'Selected LogTag® Data (*.sltd)' as the file type.



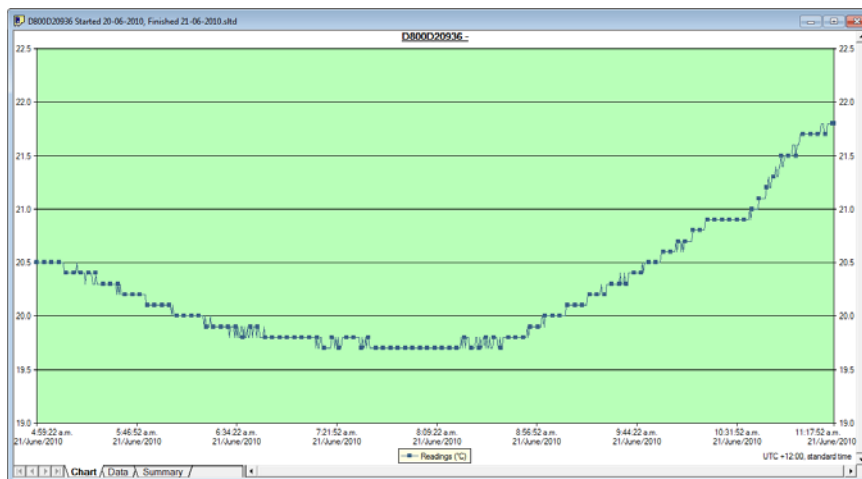
Select a file name and location for your file.

The chart of this file, which contains pre-start readings, has been zoomed to show only a small proportion of the readings:



The window slider shows there are still readings earlier and later than the displayed data.

When saved as a *.sLtd file, it will be automatically re-opened and now only displays the previously zoomed readings. You will note that the pre-start readings are no longer displayed and you cannot zoom out or display any readings before and after the selected time frame.



Note: Those readings which are no longer displayed are still present in the file. Any *.sLtd file can be saved as a *.Ltd file, and when re-opened, all readings taken by the recorder during this trip will become available for viewing.

This can also be achieved by simply re-naming the file from *.sLtd to *.Ltd.

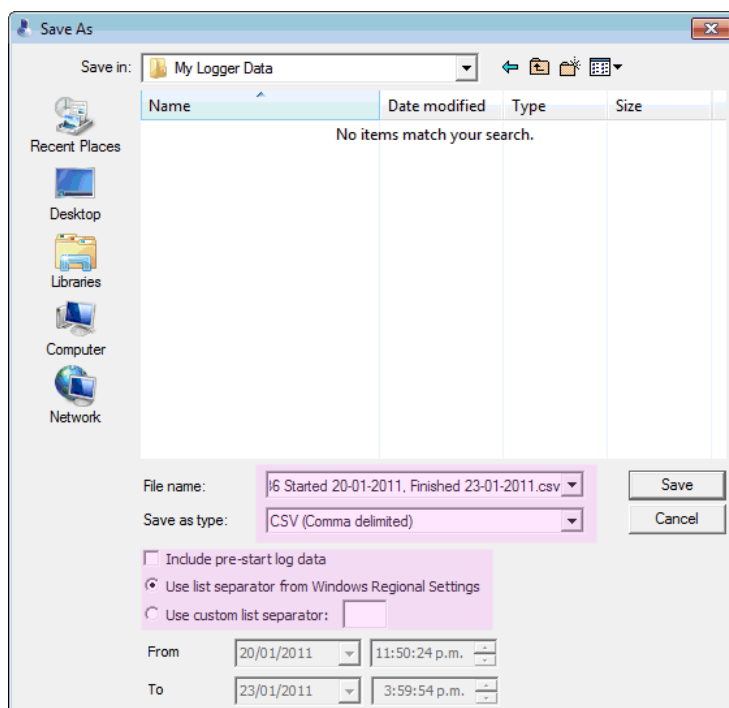
Files with a *.sLtd extension cannot be read by versions of LogTag Analyzer earlier than 2.0, they can however be read once renamed to *.Ltd.

*.sLtd files can also be opened directly from e-mail attachments or by double clicking the file in Windows Explorer, as the installer for LogTag Analyzer registers this file extension and associates it with LogTag Analyzer.

Saving a file for use in spreadsheets

Occasionally you may wish to export a LogTag data file so you can analyse it in more detail using a spreadsheet program such as Microsoft™ Excel. You can choose between a few different options to achieve this:

- You can use the **FILE - SAVE AS** command from the menu, and select the *.csv option. You can include pre-start data by ticking the box.



CSV files can be read by most spreadsheet programs.

Please note that files created by LogTag Analyzer may not always be true CSV files (**Comma Separated Values**), as they use the list separator from the Windows operating system. It does however mean the file can be opened with MS Excel without going through the data import facility. To create a true CSV file select "Use custom list separator" and enter a comma in the adjacent field. You can also use the custom list separator to generate files for applications which require other list separator characters.

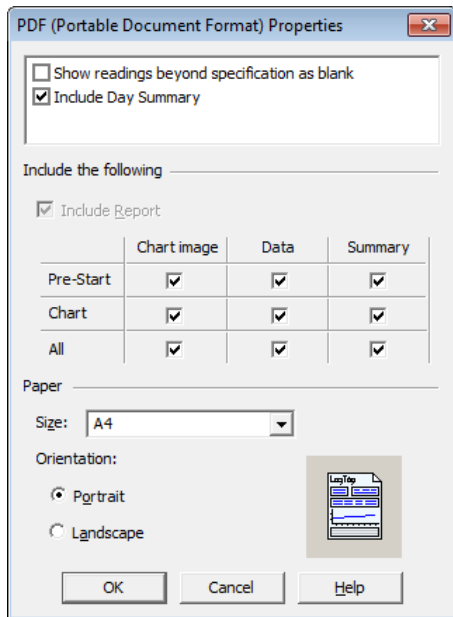
- Select the Data tab and press **CTRL-C** or choose **EDIT - COPY** from the menu. Open an empty worksheet in your spreadsheet program and select **CTRL-V** or choose **EDIT - PASTE** from the menu. The data will be pasted in the cells and you can save the file in the format of your spreadsheet program.
- Automatically export the data into a CSV file when a logger is downloaded. Please see [Exports and Reports](#) on page 117 for further details.

PDF files

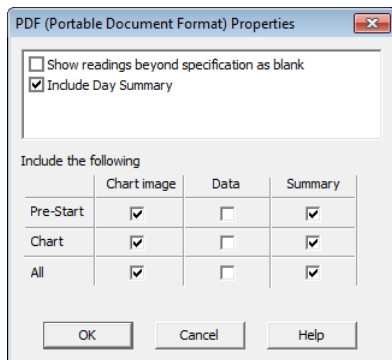
LogTag Analyzer can save the currently active LogTag® data window to a PDF file. One single file will be generated which contains chart images, summaries and a data list.

PDF files can be generated automatically, or by selecting "Save as" from the [File menu](#) (on page 125). Select a file name and location for your PDF file. Automatic generation of PDF files is

enabled in the section about [Exports and Reports](#) on page 117. Here you can also define the composition of the PDF file.



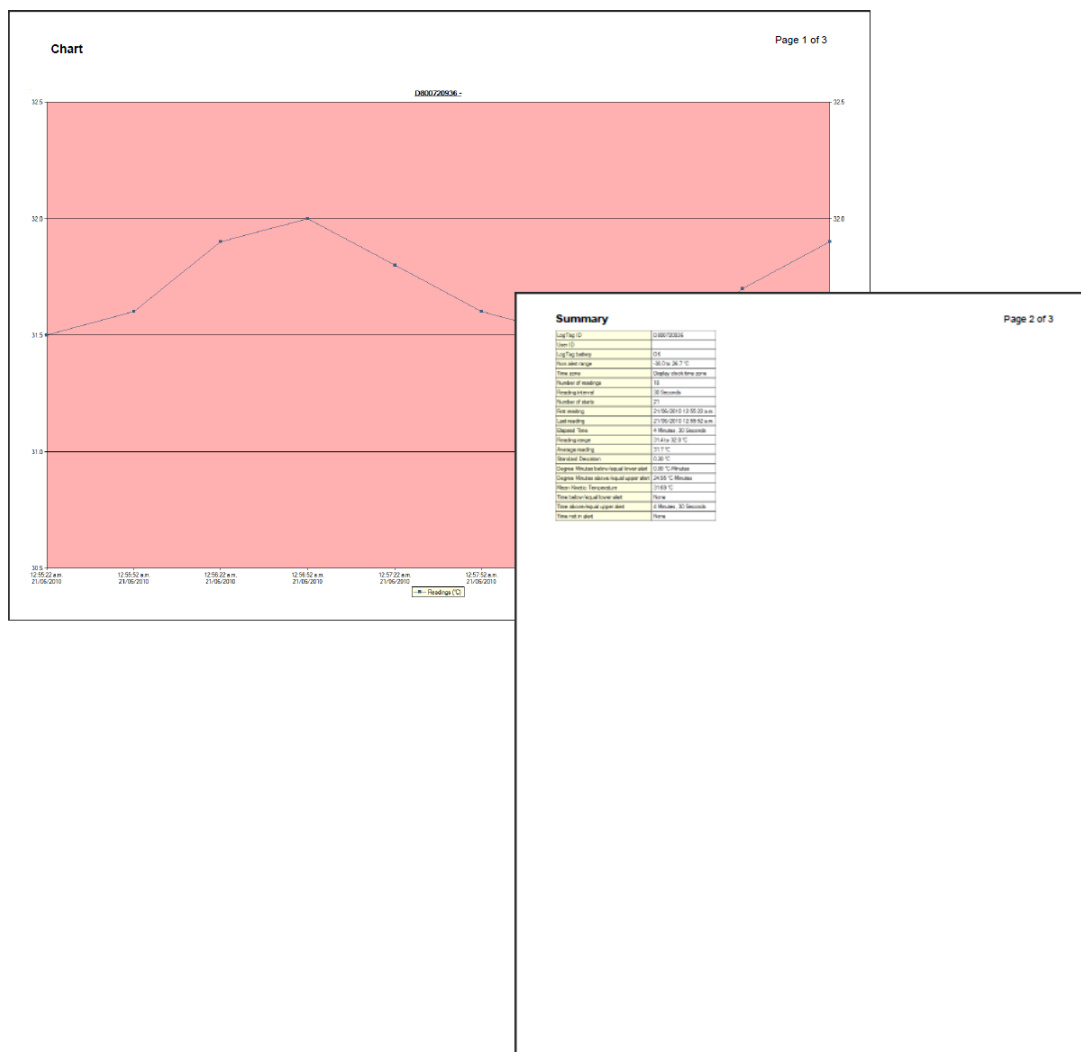
Click the [Customize *.pdf](#) button; the following dialogue window is displayed, allowing you to select which content of the PDF file will be created.



Note: Only one single Data listing will be created. Depending on which sections are enabled, pre-start only, chart only or all readings will be included.

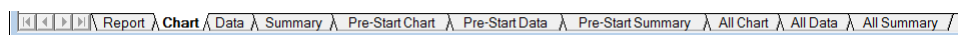
Note: The report page is always included in the PDF. For display loggers, the day summary will also be always included.

Each section can be identified by its heading. If a chart is zoomed, the PDF file will also contain a zoomed setting.



Analysing the results

Data are analysed in file windows, which appear inside the main LogTag Analyzer window. Each file window displays the data of a single logger and has a series of tabs along the bottom. Clicking on a tab changes the way the information is displayed; different windows can display different tabs.



You can activate Multi Chart display, and all open file windows are combined into a single window. You can find more information about this feature in [Combining Charts into a single chart](#) on page 76.

The different ways to display the information in the file windows are:

Tab selected	Information displayed
Report Tab	A summary display of the downloaded data, including a summary of the important trip information and an overview graph.
Chart	A display of the data in a humidity and/or temperature versus time chart.
Data	A listing (spreadsheet style) of the time versus humidity and/or temperature data.
Summary	A summary of the data, including averages, ranges, alert results, LogTag identification data, and other information.
Day Summary	A summary of the day statistics for display loggers.
Pre-Start Chart	Same as the "Chart", but limited to only show pre-start readings.
Pre-Start Data	Same as the "Data", but limited to only show pre-start readings.
Pre-Start Summary	Same as the "Summary", but limited to only show pre-start readings.
All Chart	Same as the "Chart", but showing both regular and pre-start readings.
All Data	Same as the "Data", but showing both regular and pre-start readings.
All Summary	Same as the "Summary", but showing both regular and pre-start readings.

The most used tabs will typically be the report tab or the chart tab, as the information displayed in either of them gives an instant overview of the data, whether just recorded and downloaded from a LogTag or retrieved from previously stored data files.

Pre-start logging is a feature that allows a LogTag to record readings between the time it is configured and the time it is started via the push button method, meaning data are collected even if a user accidentally forgets to start the recording. You can find out more about this feature in [pre-start logging](#) on page 41.

In some cases not all tabs previously described will be displayed. You may for example see only Report, Chart, Data and Summary, if the LogTag has been configured not to record any pre-start data.

The following sections describe each type of information display (Report, Chart, Data, Summary and Day Summary) in more detail.

Chart Display

Clicking on the **CHART** tab presents the information in the file window as a 2-D line chart with markers. When you first start LogTag Analyzer, this tab is activated by default, but you can change this in the **OPTIONS**.

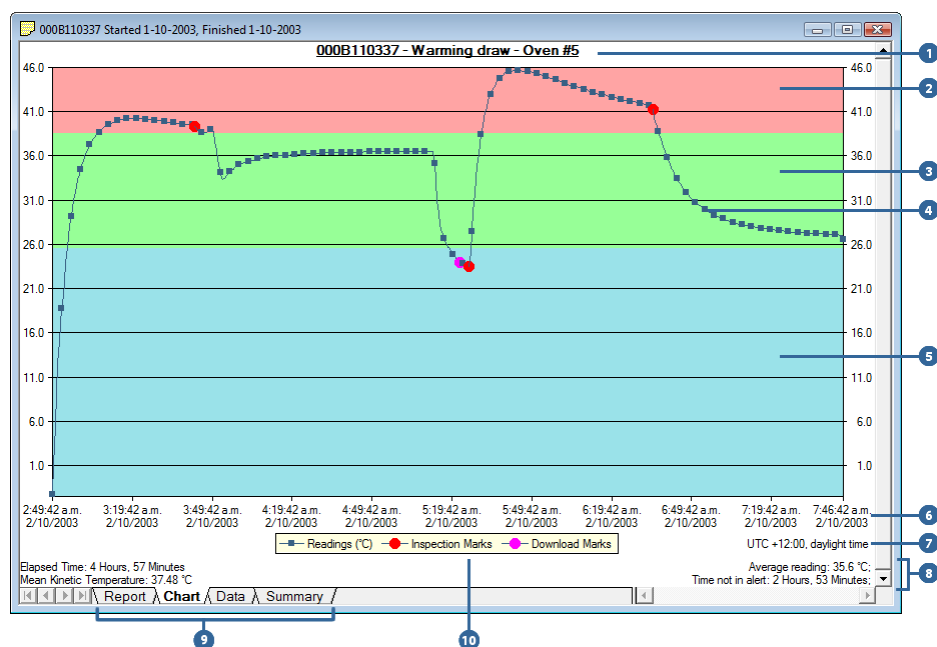
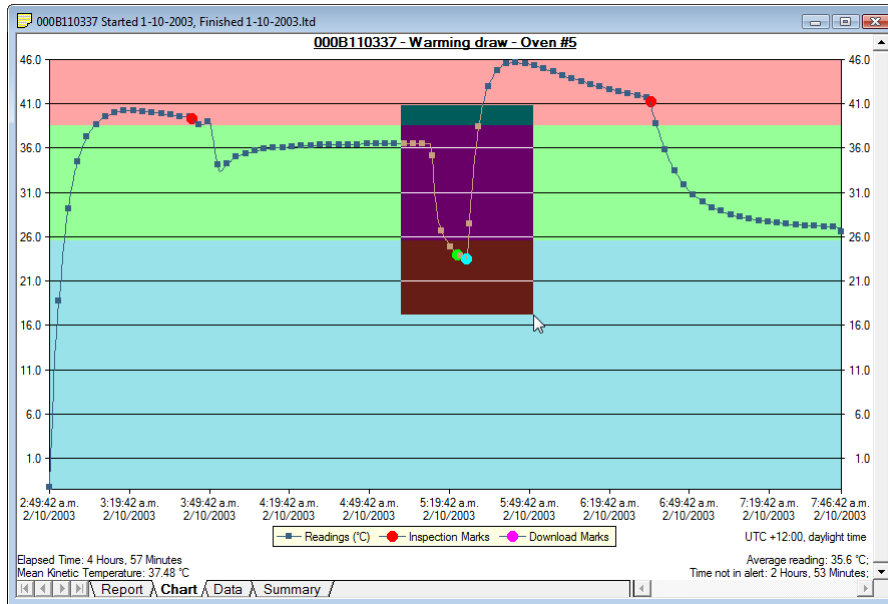


Figure 13: Chart sample

- | | |
|----------------------|----------------------|
| 1 - Chart title | 6 - Time line |
| 2 - Above alert area | 7 - Time zone |
| 3 - No alert area | 8 - Chart Statistics |
| 4 - Graph line | 9 - Tabs |
| 5 - Below alert area | 10 - Chart legend |

You can see how humidity and/or temperature changed over time. If you want to see parts of the graph in more detail, you can zoom in and display a smaller section of the data. Move the cursor to the upper left corner of the area you wish to magnify, hold down the left mouse button and move the cursor so it covers the area you wish to see:



When you release the left mouse button, the the area highlighted now fills the window:

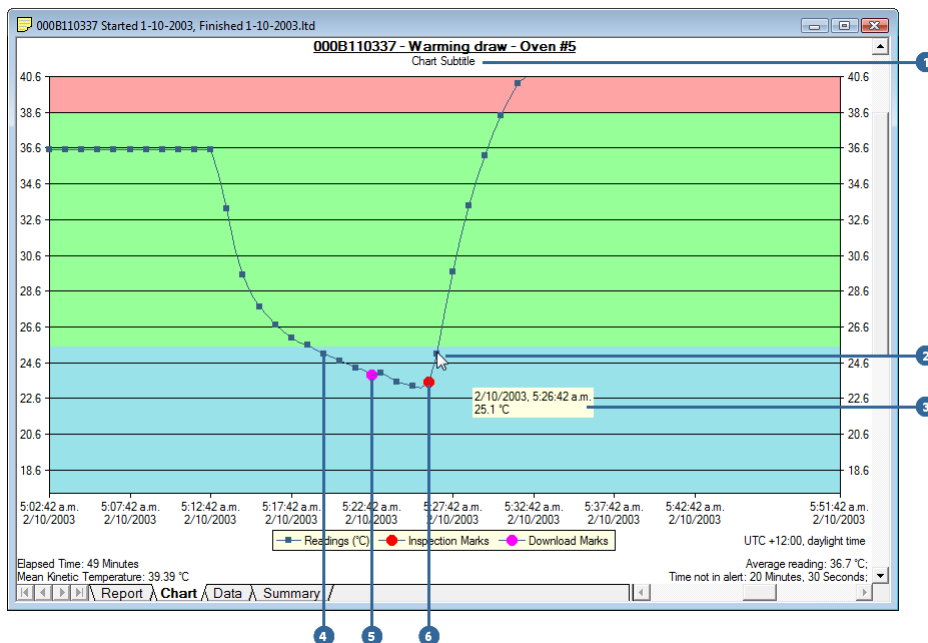


Figure 14: File window with zoomed chart

- | | |
|--------------------------------|---------------------|
| 1 - Chart sub-title | 4 - Marker |
| 2 - Mouse cursor on data point | 5 - Download mark |
| 3 - Tooltip | 6 - Inspection mark |

Depending on the zoom level not every data point may have a marker displayed. LogTag Analyzer intelligently adjusts the display of markers so the graph line is still visible. These markers can also be turned off, and their appearance can be altered. You can learn more about this in the [Charts Section](#) (see "Charts" on page 100). You can also see a number of other

marks. Inspection marks are recorded in the LogTag's memory each time its START MARK button is pressed. Each inspection mark is numbered and can be identified by counting the number of marks on the Chart display. Download marks are recorded in the LogTag's memory each time it is downloaded to a PC.

When the mouse pointer is moved over the chart, a tooltip is displayed near the mouse pointer (as shown in the example). It displays the reading closest to the mouse pointer position. If the readings are very close together, you may want to zoom in further and then inspect individual readings with the help of tooltips.

The tooltip will always show date and time of the recording, even when elapsed time is chosen for the x-axis display. This will allow you to get the date and time information quickly without having to change the setting in the options for [Charts](#) (on page 100).

You can add annotations ([Chart annotations](#) on page 65) and a subtitle ([Chart subtitle](#) on page 67) to the chart.

The chart area displayed in the window can now be copied to the clipboard by either selecting a picture of the highlighted area can be placed on the clipboard. This picture can be then be pasted into any Microsoft Windows® application. For example, if you are writing a letter and want to illustrate a point based on chart data from a LogTag, you can paste the picture of the chart directly into the letter.

You can change the appearance of all charts permanently by changing the options in [Charts](#) (on page 100). If you wish to temporarily change the appearance of only a single chart in the file window you can use the context menu, which is accessed by right clicking while the mouse cursor is in the graph area.

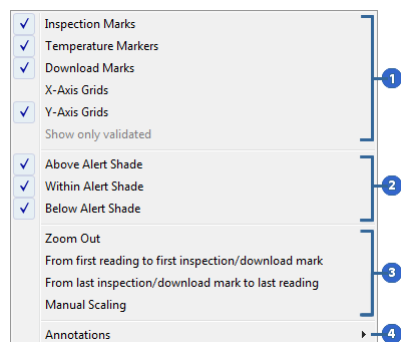


Figure 15: Context menu in chart tab

- 1 - Appearance controls
- 2 - Shade controls
- 3 - Zoom controls
- 4 - Annotations

The appearance controls influence general items on the chart, such as turning on and off marks and grid lines; these can be useful for finding information on the chart easier. Clicking on an enabled item will disable it and vice versa.

The shade controls can be used to highlight the alert and non alert areas of the chart for easier identification.

You can use the zoom controls to define which part of the data is displayed on screen (see [Zoom Control](#) on page 63) and the Annotation menu to display text on the chart (see [Chart annotations](#) on page 65).

Zoom Control

Manual Scaling

You can zoom into any detail of the chart (until you only see a single reading) by using your mouse as described. You can, however, also use direct data input to have a more refined control over the data to be displayed, such as temperature and humidity scale or the range of readings by time and date.

Call up the context menu by right clicking anywhere on the chart area and select **MANUAL SCALING**. The following dialog will be displayed:

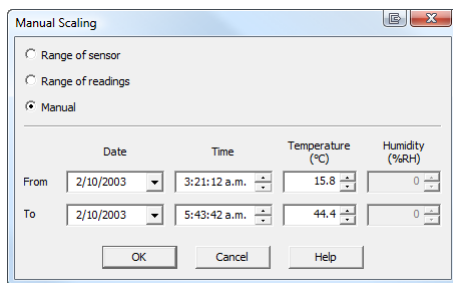




Figure 16: Manually scaling a chart

You can select:

- Range of sensor; the chart is zoomed to the minimum and maximum values for each sensor. These values are dependent on the recorder model.
- Range of readings; the chart is zoomed to the minimum and maximum reading values.
- Manual Scaling; this option lets you specify the date/time range, temperature and humidity ranges (if applicable) for the chart display. Initially the dialog shows the current zoom settings.

Click  to apply your selected settings.

To return to the previous zoom level, use the Zoom Out () command in the [Edit menu](#) (on page 127), on the [toolbar](#) (see "Toolbar commands" on page 131) or by right clicking anywhere on the graph area and selecting **Zoom Out** in the context menu.

By default, each chart is initially displayed zoomed to the range of readings. This default setting can be changed in the Options dialog (see chapter "[Charts](#)" (on page 100)).

Inspection and download mark zoom

You can also zoom directly to certain parts of the chart by using the inspection mark zoom icons on the toolbar and in the context menu.



Zoom out

Zooms out one level of the chart in the currently active window. If you are displaying a chart and this function is not available, then all available data are already being displayed and you cannot zoom out any further.



Zoom to inspection marks

This zooms the chart so readings are shown between the oldest reading recorded and the first inspection mark that exists in the data. If this function is not available then there are no inspection marks in the data currently being displayed.

The next two commands will not be available until this command is activated.



Previous inspection mark group

This zooms the chart so readings are shown which were recorded between the first inspection mark currently being displayed and the previous inspection mark.

This function is disabled when either the oldest reading is already being displayed, or the "Zoom to inspection marks" function has not been activated.



Next inspection mark group

This zooms the chart so readings are shown which were recorded between the last inspection mark currently being displayed and the next inspection mark.

This function is disabled when either the newest reading is already being displayed, or the "Zoom to inspection marks" function has not been activated.

In addition to zooming out and manually scaling the chart the context menu gives you some additional functions not available through the toolbar.

From first reading to first inspection/download mark

This zooms the chart so readings are shown between the oldest reading recorded and the first inspection mark **or** download mark that exists in the data. This is different from the "Zoom to inspection marks" feature as it also evaluates download marks. You can use this function to look at the first set of data where a logger is downloaded more than once during a trip, for example in a cold chain transport where goods are transferred from a cargo ship to a distribution truck and you are only interested in the shipping portion of the trip.

From last inspection/download mark to last reading

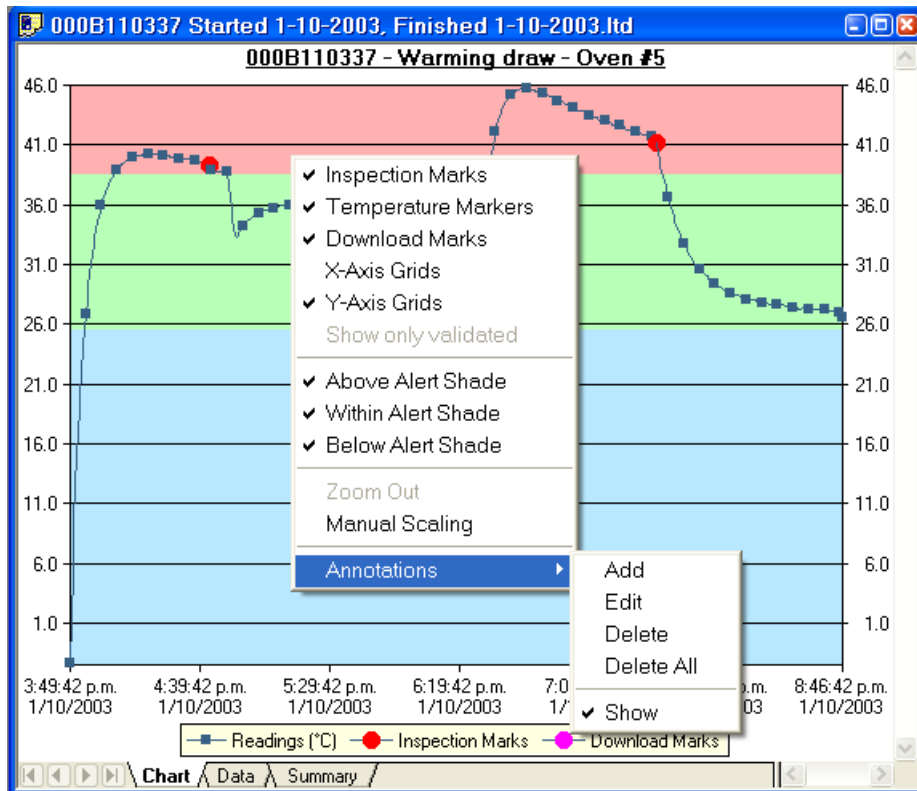
This zooms the chart so readings are shown between the last inspection mark **or** download mark and the newest reading in the data. This is different from the "Zoom to inspection marks" feature as it also evaluates download marks. You can use this function to look at the last set of data where a logger is downloaded more than once during a trip, for example on a distribution truck which has multiple drop off points and you are only interested in the last portion of the trip.

If either of the two menu points are greyed out you are either already looking at this part of the data, or there are no inspection or download marks present.

In the General section of the Options you have the opportunity to define either of these two settings as the default when files are opened or recorders are downloaded. You can see in the section [General Settings](#) (on page 98) how this is applied.

Chart annotations

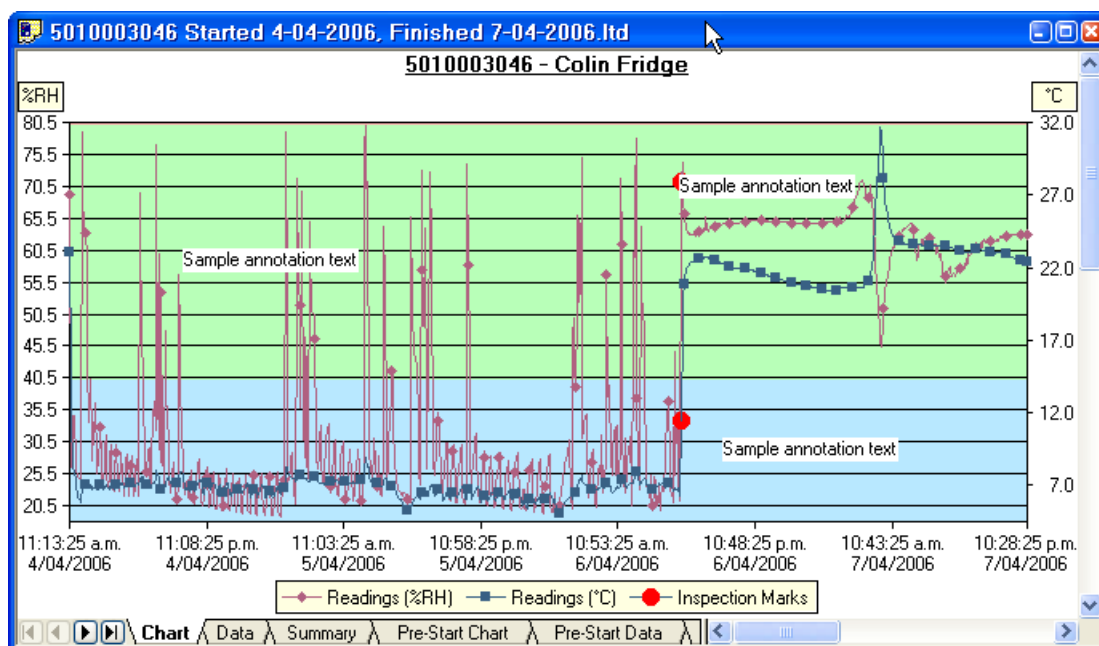
To include additional information in your chart you can add chart annotations. These will be displayed and printed with your chart. Click the right mouse button at the location where you want to add the annotation. The context menu will open, allowing you to select **ANNOTATIONS**.




Select **ADD**, enter the annotation text and click . The annotation will be displayed in the chart. When you zoom the chart display, the annotation will stay on screen as long as the point to which the annotation was attached is also displayed.

To edit an annotation, click the right mouse button while the cursor is at the annotation's location and select **EDIT** from the annotations menu. Edit the text and click to display the edited annotation.

To delete an annotation, click the right mouse button while the cursor is at the annotation's location and select "Delete" from the annotations menu. The annotation will be deleted. To delete all annotations, select **DELETE ALL**.



Selecting the "Show" command from the Annotations popup context menu will show or hide all of the annotations on the chart.

To save the annotations, click the  toolbar button or select the **SAVE** command from the **File** (see "File Menu" on page 125) menu. The annotations will be saved in a file with the same name as the data file and the file extension ".anno".

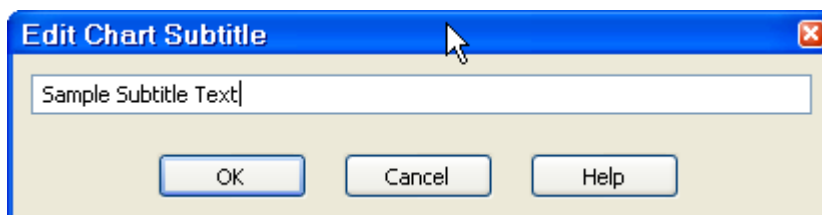
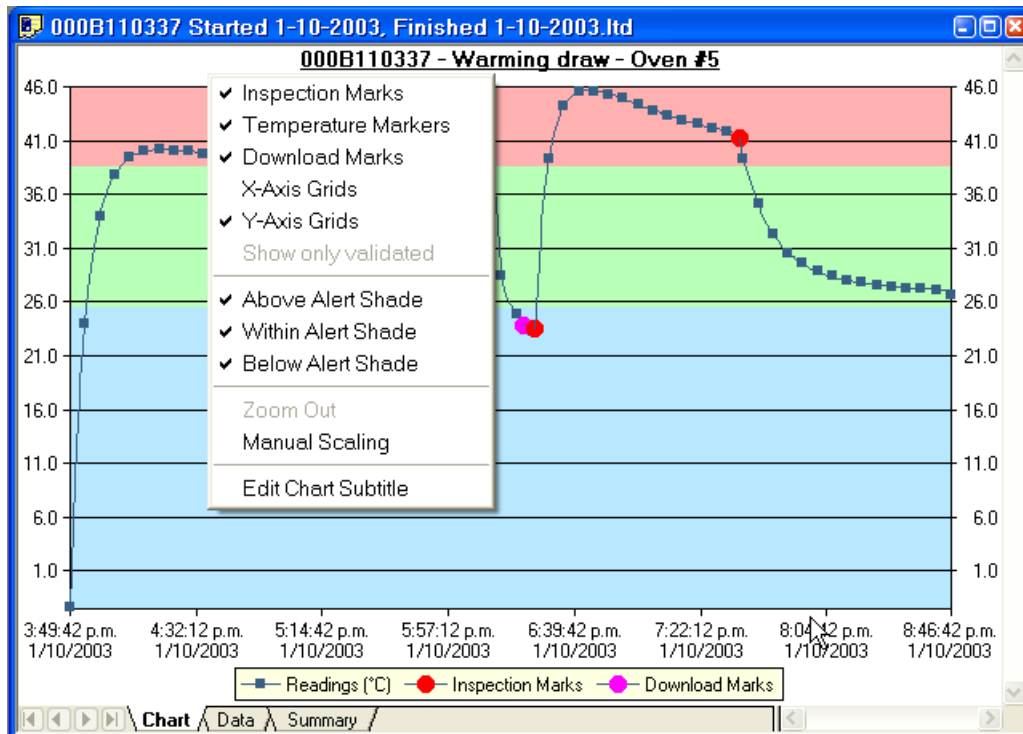
When saving annotations in Multi Chart mode, the software will ask you to specify a file name for the Multi Chart configuration, if you are saving this configuration for the first time.

Note: The contents of the original file are not changed. If the ".anno" file is accidentally deleted, the annotations will no longer be displayed, but the recorded data will still be intact.

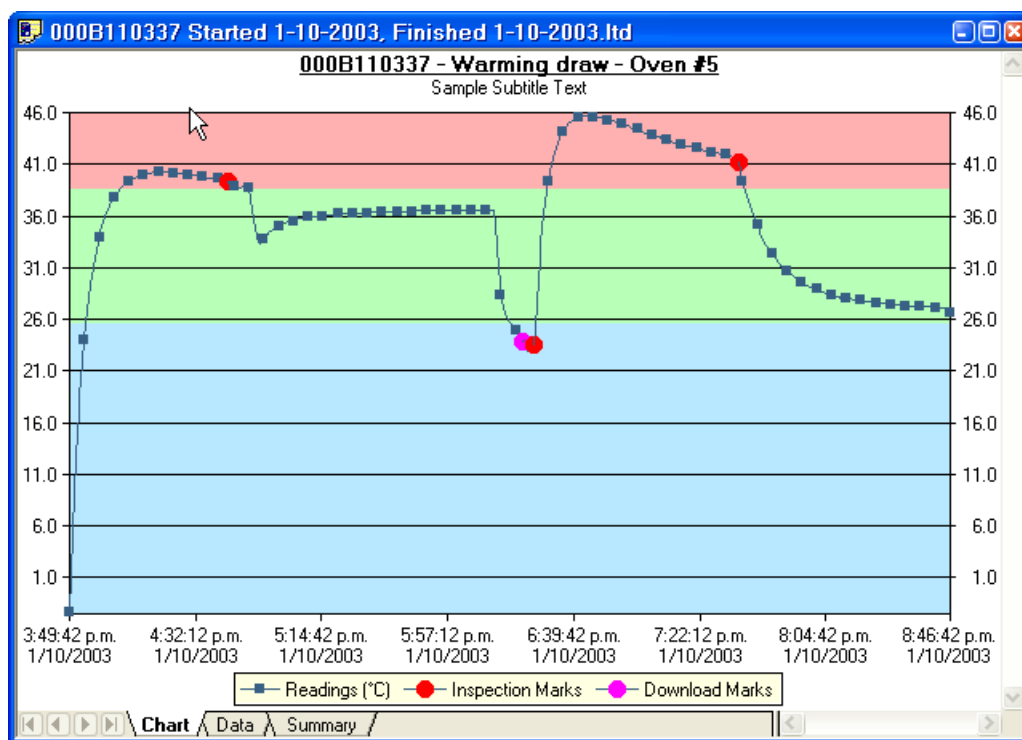
Chart subtitle


The chart subtitle is displayed and printed underneath the chart title.

To edit the subtitle, right-click on the area above the chart and select "Edit Chart Subtitle" from the popup context menu.



Enter or modify the text, then click to display the edited subtitle. To remove the subtitle, delete the text in the Edit Chart Subtitle dialog and click .



To save the chart subtitle click on the  toolbar icon or select the [Save](#) (see "File Menu" on page 125) command from the [File](#) (see "File Menu" on page 125) menu.

If the LogTag Analyzer application is in Single Chart mode, the subtitle (and annotations) for the currently active chart will be saved in a file with the chart file name and the file extension .anno.

In Multi Chart mode, the subtitle is saved in the Multi Chart configuration file (file extension .multi). If you are saving the configuration for the first time, you will be asked to specify a file name for the Multi Chart configuration.

Report Display

The Report display provides a convenient and quick way of seeing all important information for a trip in one single screen.

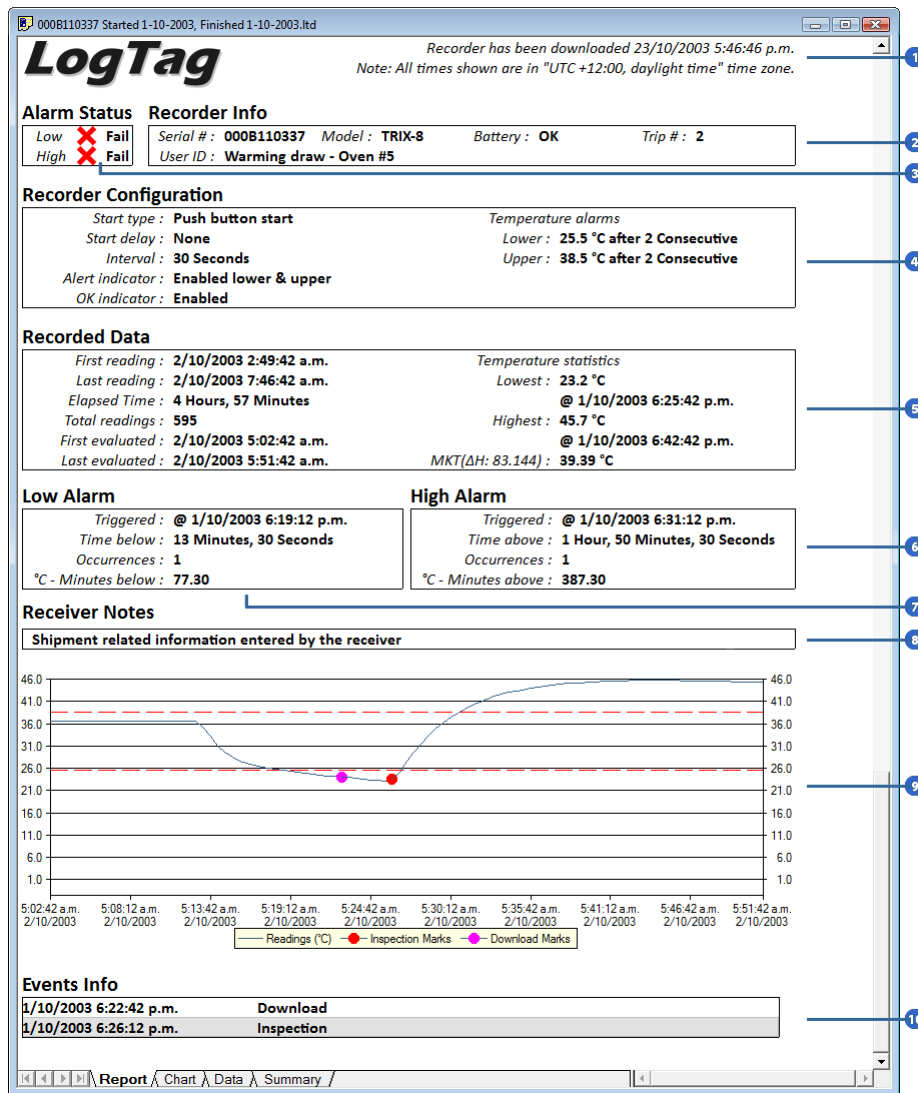


Figure 17: Sample report tab

The graph area shows a slightly smaller version of the chart. The zoom controls are linked to the chart tab. If you zoom in to a particular area on the report's chart area, the same area will be displayed in the chart tab and vice versa. You can use the same zoom controls as in the chart, with some exceptions to the context menu controls.

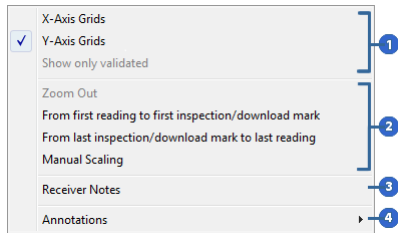
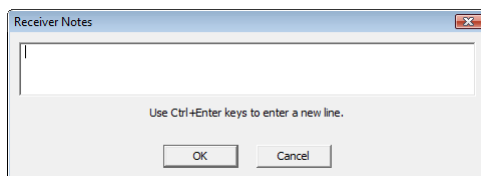


Figure 18: Report tab context menu

- 1 - Grid control
- 2 - Zoom control
- 3 - Receiver notes
- 4 - Annotations

Some of the appearance and shade controls are no longer available, however the remaining grid and zoom controls work the same as they do in the [chart tab](#) on page 63, and so does the [annotation function](#) on page 65. Annotations added in the chart tab will be displayed in the report chart and vice versa.

When you select **RECEIVER NOTES** you will be able to add a text field that is then displayed in the report's Receiver Notes section every time the file is opened.



These notes are stored in the "*.anno" file, which also holds the chart annotations. This file must be present in the same directory as the "*.ltd" file.

If you enlarge the width of the window sufficiently, the report will be displayed in landscape format.

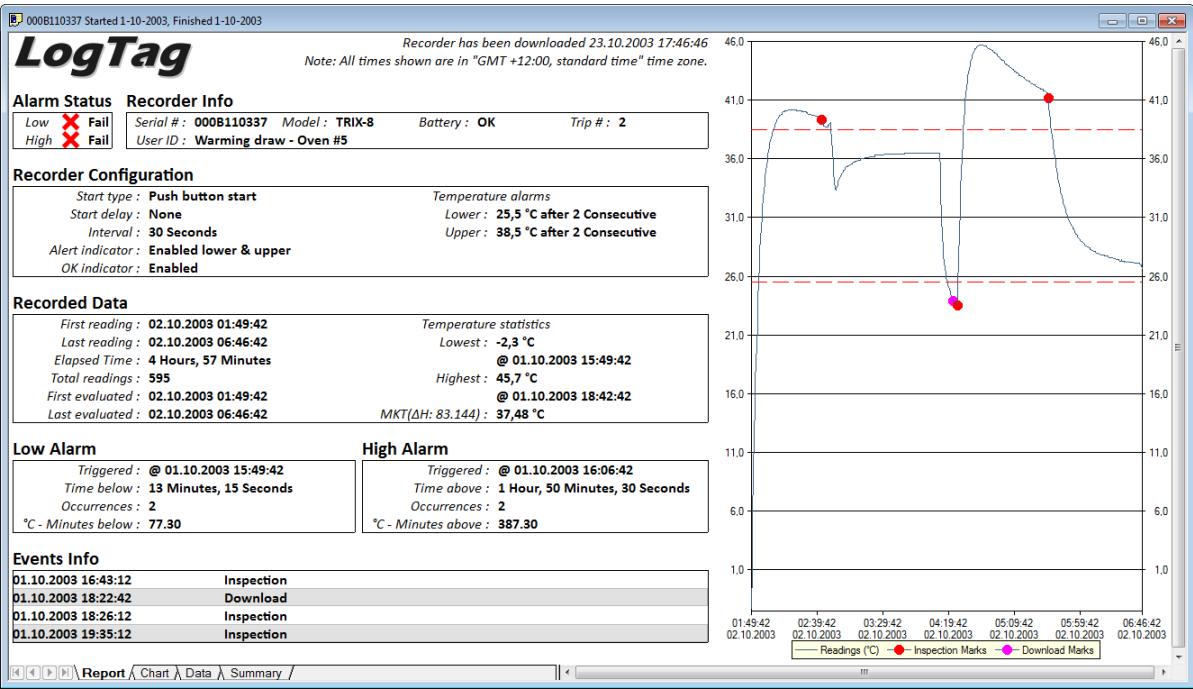


Figure 19: Report tab in landscape format

Data Display

When you click on the data tab the readings are displayed in a list in chronological order from top to bottom, also showing index, date & time and elapsed time. On the list you can also identify any special marks attached to the reading, such as download marks (identified through purple background) and inspection marks (identified through red background). The colour of the text identifies if a reading has been above the upper alert value (red), below the lower alert value (blue) or within specification (black). You can scroll through the readings with the arrow, page up/down, home and end keys, or use the mouse to move the readings with the scroll bar.

Index	Date	Time	Elapsed Time	Readings (°C)
306	02.10.2003	04:22:12	02:32:30	24.2
307	02.10.2003	04:22:42	02:33:00	23.9
308	02.10.2003	04:23:12	02:33:30	24.0
309	02.10.2003	04:23:42	02:34:00	23.8
310	02.10.2003	04:24:12	02:34:30	23.5
311	02.10.2003	04:24:42	02:35:00	23.4
312	02.10.2003	04:25:12	02:35:30	23.3
313	02.10.2003	04:25:42	02:36:00	23.2
314	02.10.2003	04:26:12	02:36:30	23.5
315	02.10.2003	04:26:42	02:37:00	25.1
316	02.10.2003	04:27:12	02:37:30	27.5
317	02.10.2003	04:27:42	02:38:00	29.7
318	02.10.2003	04:28:12	02:38:30	31.7
319	02.10.2003	04:28:42	02:39:00	33.4
320	02.10.2003	04:29:12	02:39:30	34.9
321	02.10.2003	04:29:42	02:40:00	36.2
322	02.10.2003	04:30:12	02:40:30	37.4
323	02.10.2003	04:30:42	02:41:00	38.4
324	02.10.2003	04:31:12	02:41:30	39.3
325	02.10.2003	04:31:42	02:42:00	40.2
326	02.10.2003	04:32:12	02:42:30	40.9
327	02.10.2003	04:32:42	02:43:00	41.5

Figure 20: Sample data grid

- 1 - List header row
- 2 - Reading with download mark
- 3 - Reading below lower alert value
- 4 - Reading with inspection mark
- 5 - In spec readings
- 6 - Reading above upper alert value
- 7 - Scroll bar

The data tab will only display those readings shown on the corresponding chart. If the chart is zoomed in, the data tab gives access to only the zoomed readings. You cannot use the scroll bar or arrow keys to display readings before or after the currently zoomed readings.

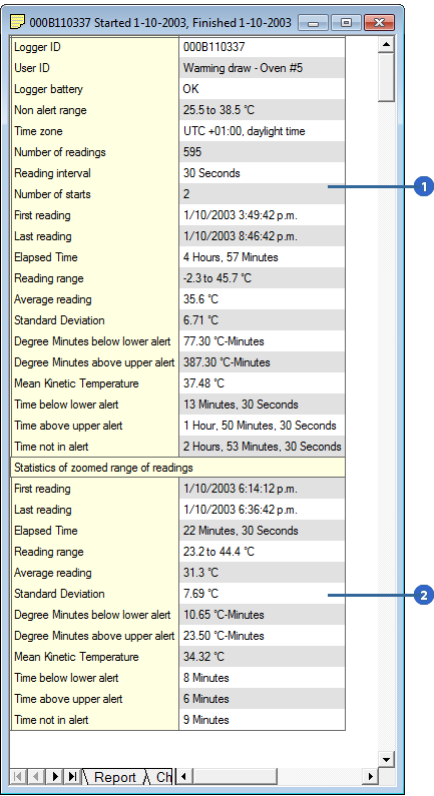
The list grid can be copied to the Windows clipboard and pasted into other windows applications such as spreadsheets, including the list header row. When the corresponding chart is zoomed in, only those values will be copied.

The zoom controls available for the chart tab are inactive in the data tab.

Summary Display

The summary tab offers a brief statistics overview of some of the important trip data. You can customise the statistical data you wish to include in this tab in the Options dialogue for the [Summary Statistics](#) on page 99.

The first section shows the data for the complete trip, regardless of whether or not the chart is zoomed in. The second section is only displayed if the chart is zoomed in, and displays the statistics for only the zoomed readings.



- 1 - Statistics summary for entire trip
- 2 - Statistics for zoomed readings

If there are readings beyond the limits of the sensor within the time interval displayed, the statistics for this interval will show "***".

The zoom controls available for the chart tab are inactive in the summary tab.

If inspection marks are present in the data, statistics summaries for each of the inspection mark groups in the data can be seen amended to the end.

Statistics for between the first reading and inspection mark #1:	
First reading	1/10/2003 3:49:42 p.m.
Last reading	1/10/2003 4:42:42 p.m.
Elapsed Time	53 Minutes
Reading range	-2.3 to 40.2 °C
Average reading	35.8 °C
Standard Deviation	8.73 °C
Degree Minutes below lower alert	66.65 °C-Minutes
Degree Minutes above upper alert	48.55 °C-Minutes
Mean Kinetic Temperature	37.84 °C
Time below lower alert	5 Minutes, 30 Seconds
Time above upper alert	36 Minutes, 30 Seconds
Time not in alert	11 Minutes, 30 Seconds

Statistics for between inspection mark #1 and inspection mark #2:	
First reading	1/10/2003 4:43:12 p.m.
Last reading	1/10/2003 6:25:42 p.m.
Elapsed Time	1 Hour, 42 Minutes, 30 Seconds
Reading range	23.2 to 39.3 °C
Average reading	35.0 °C
Standard Deviation	3.67 °C
Degree Minutes below lower alert	9.45 °C-Minutes
Degree Minutes above upper alert	2.75 °C-Minutes
Mean Kinetic Temperature	35.53 °C
Time below lower alert	7 Minutes
Time above upper alert	7 Minutes, 30 Seconds
Time not in alert	1 Hour, 28 Minutes, 30 Seconds

Statistics for between inspection mark #2 and inspection mark #3:	
First reading	1/10/2003 6:26:12 p.m.
Last reading	1/10/2003 7:34:42 p.m.
Elapsed Time	1 Hour, 8 Minutes, 30 Seconds
Reading range	23.5 to 45.7 °C
Average reading	42.8 °C
Standard Deviation	3.64 °C
Degree Minutes below lower alert	1.20 °C-Minutes
Degree Minutes above upper alert	332.50 °C-Minutes
Mean Kinetic Temperature	43.29 °C
Time below lower alert	1 Minute
Time above upper alert	1 Hour, 4 Minutes
Time not in alert	4 Minutes

- 1 - Statistics summary for first inspection mark group
- 2 - Statistics summary for second inspection mark group
- 3 - Statistics summary for third inspection mark group

The list grid can be copied to the Windows clipboard and pasted into other windows applications such as spreadsheets, including the list header row.

Day Summary Display

The day summary tab is displayed for LogTags with an integrated statistics memory, such as TRID30-7 and TRED30-7 recorders.

It shows the history of up to 30 days, arranged into 24 hour periods, with information about maximum and minimum values for the day, and if alarms have been triggered on those days.

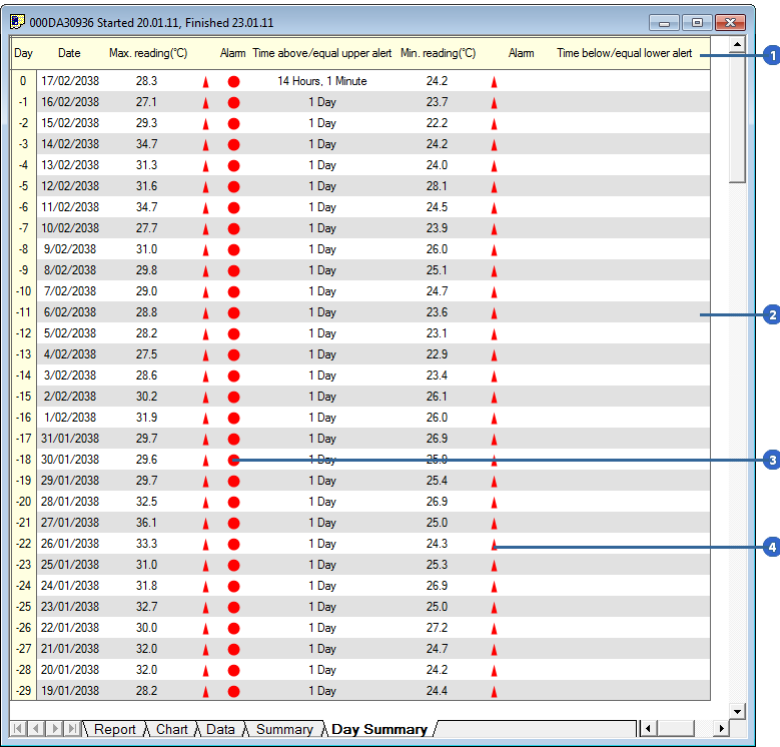



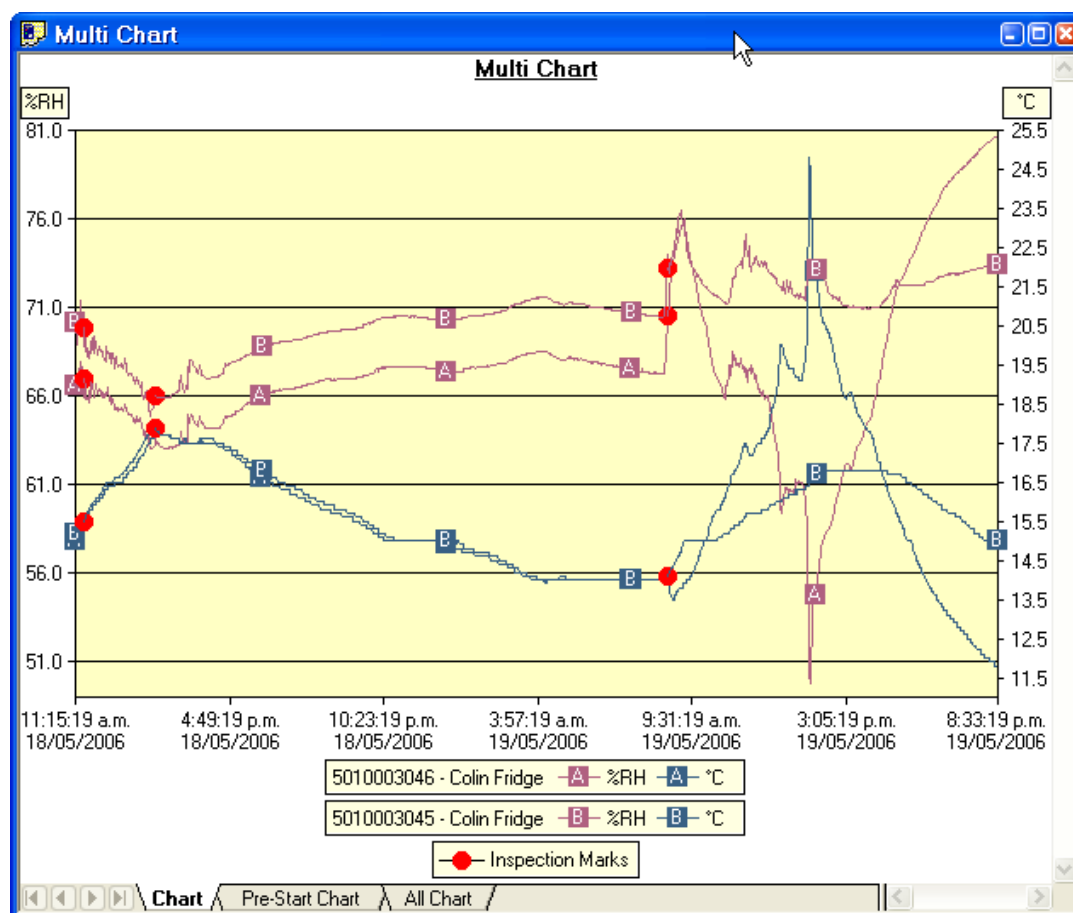
Figure 21: Day summary display

- 1 - Day summary header row
- 2 - Summary grid
- 3 - Alarm marker
- 4 - Above Alarm level marker

The Day summary grid can be copied to the Windows clipboard and pasted into other windows applications such as spreadsheets, including the header. row.



Combining charts onto a single chart

To overlay multiple charts in one view, select the Multi Chart  command. All charts that are currently open will be displayed together. Additional files opened while in Multi Chart mode (including data downloaded from LogTags) will be added to the display.



Each of the individual charts will be displayed with a letter symbol to allow you to tell them apart. The legend contains an entry for each chart showing the chart name and the corresponding letter.

You can change the background color for the Multi Chart display through the [Charts](#) (on page 100) [section](#) in the Options (see "Customising the software" on page 96) Window.

To remove charts from the Multi Chart display, use the Single Chart  command to switch to Single Chart mode, then close the files you don't want to display. Select the Multi Chart  command to switch back to Multi Chart mode.

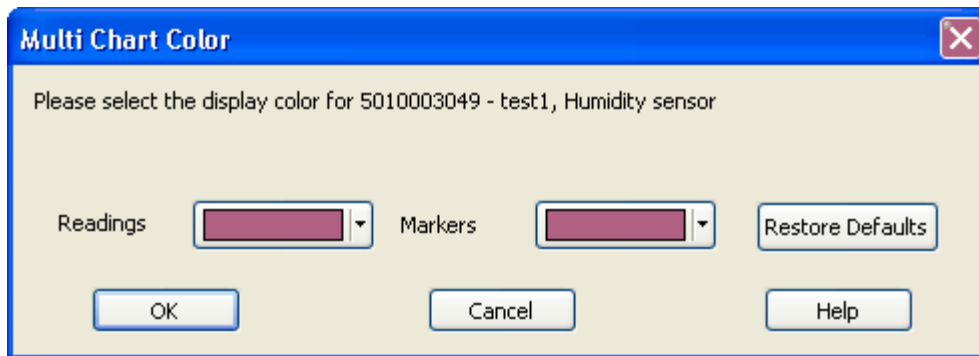
You will notice that the Data and Summary tabs are not available in the Multi Chart display. If you require additional information about the chart data, activate the display of the desired statistics on in the [Chart Statistics](#) (on page 99) [section](#) in the [Options](#) (see "Customising the software" on page 96) Window. The chosen values will be displayed separately for each chart.

You can also view [Min, Max and Average Charts](#) (see "Special Chart Tabs" on page 79), and select other options.

Changing Chart Colours

By default, all charts in the Multi Chart display are displayed in the colors specified in the [Charts](#) (on page 100) section within the [Options](#) (see "Customising the software" on page 96) Window.

To change the display color of individual charts/sensors, move the mouse pointer over a chart until the tooltip is displayed. Right-click, then select "Change Chart Color" from the popup context menu.

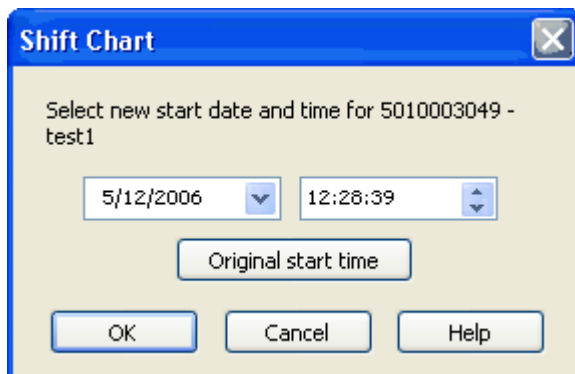


Select the desired colors for the chart readings and markers in the color selector boxes. To restore the default color (as specified in the [Charts](#) (on page 100) section within the [Options](#) (see "Customising the software" on page 96) Window), select the "Restore Defaults" command.

Shifting chart start times

For easier data comparison, chart start times can be shifted in Multi Chart display. There are two ways to shift a chart along the time axis:

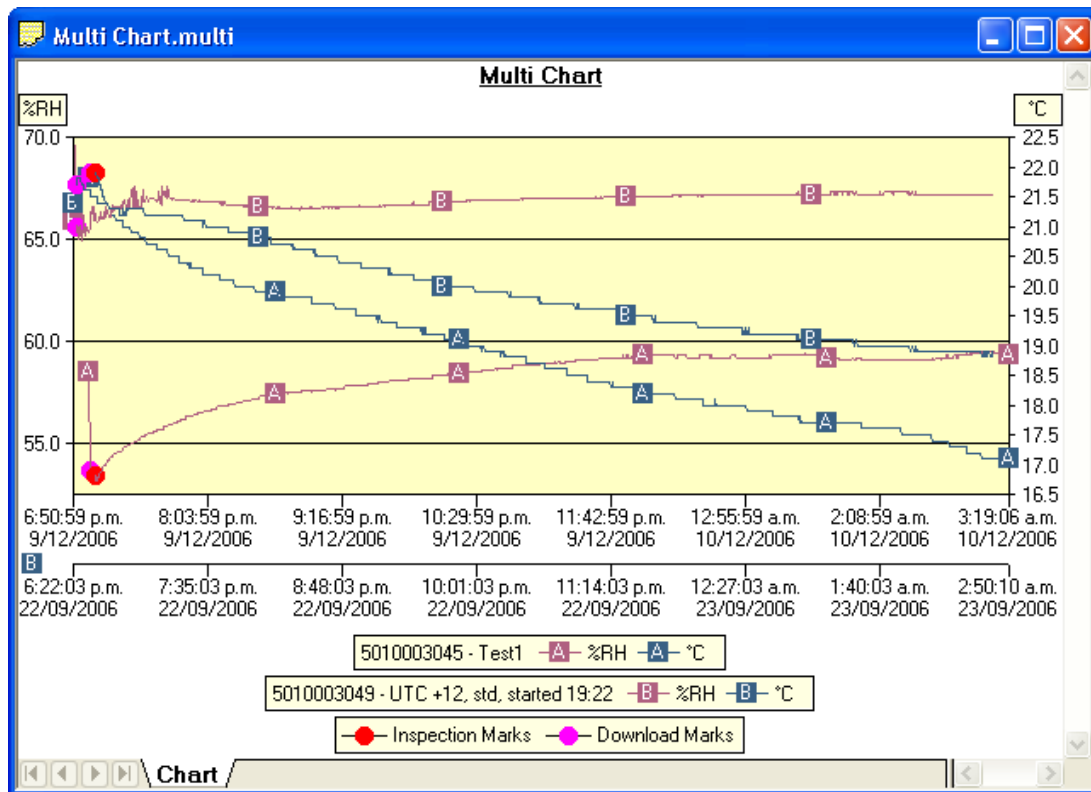
1. Move the mouse pointer over the chart until the appropriate tooltip is displayed. Right-click, then select the "Shift Chart" command from the popup context menu. This will cause the following dialog to be displayed, where the new start time and date can be entered, or the chart can be revert to its original date/time by selecting the "Original start time" button. Click the OK button to display the change.



2. Press and hold the CTRL key, left-click on the chart you would like to move, and drag the chart to new the position.

An additional time axis is displayed for each shifted chart indicating the corresponding time in relation to the original start time.

Note: Shifting a chart will not change any of the original recorded data, only the location the data is displayed in relation to other charts within the Multi Chart display will change.



Aligning Charts



Select "Align Charts" from the popup context menu to automatically align all charts in the current Multi Chart window.

The charts are aligned to the earliest start time:


- "Chart" tab: All start times are aligned.
- "Pre-start Chart" tab: All charts with Pre-start readings are aligned to the earliest Pre-start reading.
- "All Chart" tab: Charts are aligned to the earliest reading (Pre-start reading if any Pre-start readings have been recorded for the chart).

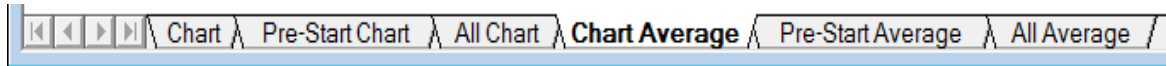
Every chart is assigned a different colour and a time axis is displayed to illustrate the original start time. You can display the elapsed time instead of the date/time by selecting the "Elapsed Time" option in the Chart Options dialog ([Charts](#) (on page 100)).

Aligning charts in one tab will also influence how these charts are represented in the other tabs. If for example you select "Align Charts" in the "Chart" tab, and switch to the "All Chart" tab, you will notice that the charts are now aligned at a new origin, with all pre-start readings to the left and all readings to the right of this origin. The charts in the "Pre-start" tab are aligned with the last pre-start reading to the right.

To revert to the original start times for all charts, select  in the toolbar to switch to Single Chart mode, then switch back to Multi Chart mode with .

Special Chart Tabs

When you select the average tab  command in the toolbar, up to three additional chart tabs will be shown, with the Chart Average tab highlighted:

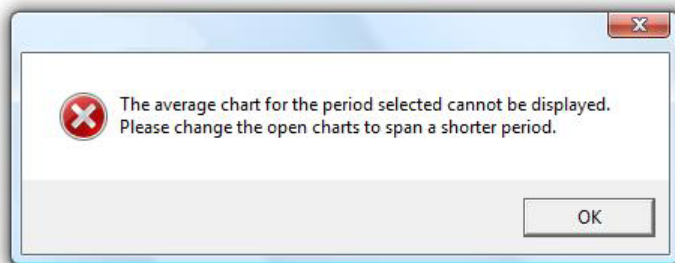



These chart tabs display graphs calculated from the "Chart", "Pre-Start Chart", and "All chart" tabs and show minimum, maximum and average value graphs. Changes in either of the three original data displays, such as adding a new file and aligning or shifting charts, result in a re-display of the corresponding "Min/Max/Average" tab, e.g. if one of the charts in the "Pre-Start Chart" is shifted, the "Pre-Start Min/Max/Average" chart would redraw showing graphs based on the updated values.

You can annotate these special chart tabs in the same way as other chart tabs; such annotations will be visible in the other chart tabs and are stored with the multi chart when saved.



Please note that following behaviour applies to these special chart tabs:

- Zoom settings will not be transferred to the "Average" tabs.
- Download marks and inspection marks will not be displayed in the "Average" tabs.
- Non-validated readings and re-calibrated readings will not be displayed with the special attributes, even if set in the options. If you have chosen to "show non-validated readings", they are included in the minimum/maximum/average calculations, otherwise not.
- To avoid memory overflows there are some restrictions regarding the maximum allowed time span of the charts in a multi-chart. These restrictions vary with logging interval, should you try to add a chart outside the allowed range following dialogue box will appear:



In this case the multi chart will disassemble, so you can close the window whose chart you no longer want to display, and re-assemble the multi-chart by clicking on .

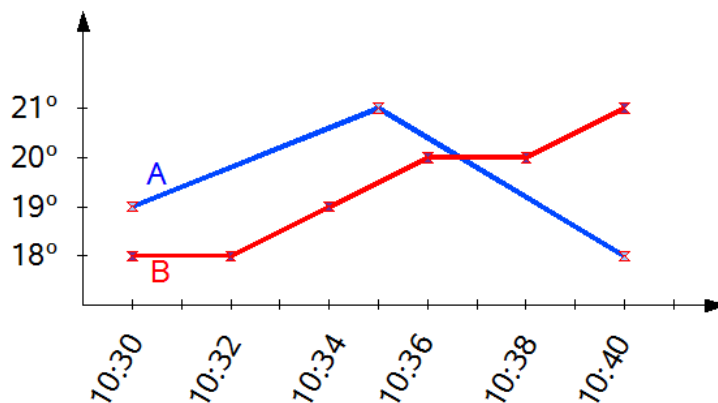
- If one or more of the charts have sections with readings outside the LogTag's sensor range, LogTag Analyzer is unable to calculate the minimum, maximum and average values, and those sections of the graph will not be displayed. This will likely result in a "broken" graph line, regardless of whether "show readings beyond specifications" in the [Charts](#) (on page 100) [section](#) in the Options (see "Customising the software" on page 96) Window is enabled or not.
- Due to the large number of calculations performed in this feature, specifically when opening large numbers of charts spanning long periods, having the average tabs displayed can occupy large amounts of memory and run slow. Therefore we recommend only turning the feature on when required.

Clicking on the highlighted average tab  command will turn the average tabs off. Selecting the single charts  command in the toolbar while the average charts are active will disassemble the multi chart, and when switching back to multi chart the average tabs will be displayed again until turned off.

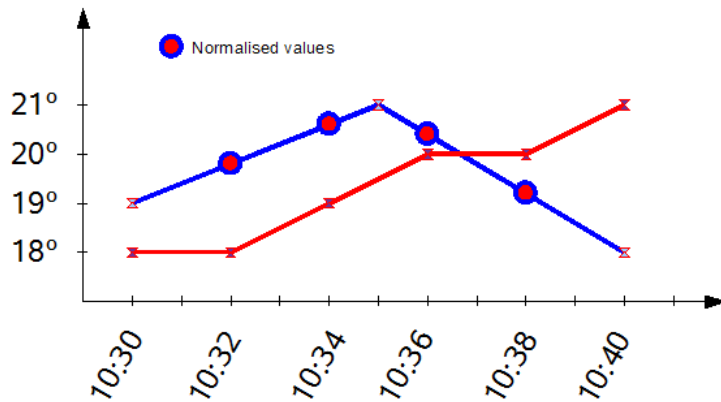
Behind The Scenes

To create some meaningful results, LogTag Analyzer uses a special trend line process to calculate the minimum, maximum and average values across multiple charts, rather than a histogram. It is important you understand this mechanism, so you can interpret the displayed readings correctly.

This is an example of two LogTag[®]s, one with a 5 minute log interval (A) and the other (B) logging every 2 minutes.

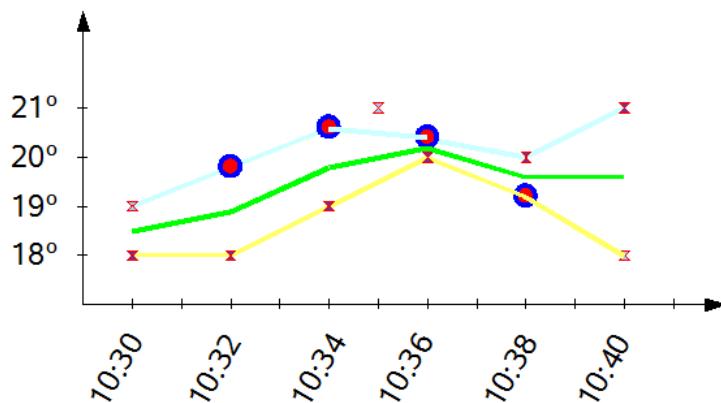


Before the data are displayed in an average tab, LogTag Analyzer normalizes every chart's readings so they fall in line with the logging interval of the LogTag with the shortest log interval, in this case unit (B). It does not shift any charts, but rather calculates a theoretical value for those reading times by linear interpolation. Interpolation determines probable environmental conditions, i.e. what the LogTag would have recorded if taking a reading at that time.



Without this method, it would not be possible to compare LogTags with different log intervals, or units that have the same log interval, but were started at different times.

Starting with the earliest time present in the chart, a value is created for each LogTag as if it had recorded a log at that time. It is those values that are used to calculate and display the minimum, maximum and average charts.



As a result of this process, absolute values for minimum and maximum may not always be shown if they do not fall on normalized times, as seen in the example at 10:35 - despite 21°C being the maximum it will not be displayed as it is not a normalized value.

Note: The charts in above example are based on LogTags started at the same time. If unit (A) had been started earlier, depending on the start time unit (B) may also have its readings interpolated. To ensure the chart with the shortest log interval always has its real values shown, please use the [Aligning Charts](#) (on page 78) function from the context menu.

Automatically calculated statistics

When a file is displayed either from downloading or from calling up a stored data file, the software will automatically calculate and display some statistics of the recorded data. These statistics are shown on the corresponding Summary tab and are also calculated for each sequence of data points between the inspection marks.

If any readings within the time interval are beyond the limits of the sensor, the values for Average Reading, Standard Deviation, and Mean Kinetic Temperature will not be displayed for the relevant time interval.

Average Reading

The Average Reading is the arithmetic mean of the sequence of data points. It is calculated by adding all the data point values together and then dividing the total by the number of data points. Mathematically this formula can be expressed as illustrated in the following picture:

$$av = \frac{\sum_{i=1}^n t_i}{n}$$

Where:

av the calculated arithmetic mean

n the number of data points to include in the calculation

t_i a data point to include in the calculation

For example, if there were 5 data points to calculate the arithmetic mean of and they were, 12.3, 15.9, 16.2, 14.7, 14.9, then the arithmetic mean would be 14.8.

Standard Deviation

The standard deviation is a useful for determining how spread out the readings are from the arithmetic mean (Average Reading). Most controlled environments typically try to keep the environmental conditions at a stable and consistent humidity and/or temperature. The standard deviation can be used to help indicate how stable the environmental conditions were maintained. One standard deviation (sometimes expressed as "one sigma") away from the mean, positive or negative represents approximately 68 percent of all the readings. Two standard deviations, or two sigmas, away from the mean represents approximately 95 percent of the readings. Three standard deviations represent about 99 percent of the readings.

For example, if the arithmetic mean of the readings was 50.6°C and the standard deviation was 2.3°C, then approximately 68% of the readings were between 48.3°C and 52.9°C, 95% of all the readings were between 46.0°C and 55.2°C and 99% of the readings were between 43.7°C and 57.5°C. Further more, if all the readings were recorded over a span of 1 day (24 hours) then the temperature was between 48.3°C and 52.9°C for approximately 16 hours and 19 minutes during the recorded period of time.

Mathematically the formula for calculating the standard deviation can expressed as illustrated in the following picture:

$$s = \sqrt{\frac{\sum_{i=1}^n (t_i - av)^2}{n - 1}}$$

Where:

- s the calculated standard deviation
- n the number of readings to include in the calculation
- av the calculated arithmetic mean
- t_i a reading to include in the calculation

For example, if there were 5 readings to calculate the standard deviation of and they were, 12.3, 15.9, 16.2, 14.7, 14.9, then the standard deviation would be 1.54

Mean Kinetic Temperature

Some products and materials have accelerated rates of degradation at higher temperatures. For example, perishable food items, pharmaceutical products and many forms of bacteria can grow/degrade exponentially as the environmental temperature increases. Mean kinetic temperature is a calculation that accommodates the non-linear thermal effect temperature can have on products. Mean kinetic temperature is represented as the equivalent temperature the product was thermally subjected to during the period of time the various temperature reading were recorded.

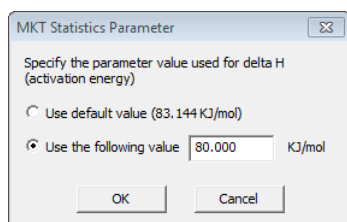
Mathematically the formula for calculating the mean kinetic temperature can be expressed as illustrated in the following picture:

$$mkt = \frac{-\frac{\Delta H}{R}}{\ln\left(\frac{\sum_{i=1}^n \exp\left(\frac{-\Delta H}{R \times (t_i + 273.15)}\right)}{n}\right)} - 273.15$$

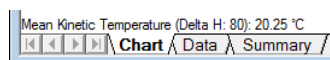
mkt Mean kinetic temperature, in degrees Celsius

ΔH the activation energy. By default LogTag Analyzer uses an activation energy value of 83.144 KJ/mol for the calculation.

You can select a custom value for ΔH by clicking the [Customize...](#) button in the Summary Statistics or Chart Statistics option screen and entering the desired value.



Charts and the Statistics page display the ΔH parameter if it is different to the default value:



R the universal gas constant, which is 0.0083144 KJ/mol K

n the number of data points to include in the calculation

t_i a data point to include in the calculation, in degrees Celsius

For example, if there were 5 data points to calculate the mean kinetic temperature of and they were, 12.3, 15.9, 16.2, 14.7 and 14.9 degrees Celsius, then the mean kinetic temperature would be 14.9 degrees Celsius using the default ΔH .

Degree Minutes

There are some products and materials that exist which can change their characteristics and/or degrade if they experience temperatures which are not within ideal conditions for long enough. For example, some products may experience freezer burn if they experience an extremely cold condition or experience a colder than ideal temperature for long enough period of time. Other products for example, ice cream, change their characteristics if they experience temperatures which allow it to melt. The LogTag Analyzer will automatically display the results of two separate Degree Minutes calculations. The result of the first Degree Minutes calculation displayed will be based on the readings that were recorded below the ideal conditions and the result of the second Degree Minutes calculation displayed will be based on the readings that were recorded above the ideal conditions. The ideal conditions used in the calculation of the Degree Minutes formula are based on the upper and lower alert values that were configured when the LogTag was originally prepared for use.

Mathematically the formula for calculating the degree minutes above alert can be expressed as illustrated in the following picture:

$$\text{deg min} = \sum_{i=1}^n \text{abs}(t_i - a) \times s$$

Where:

- degmin Total Degree Minutes spent above/below the alert threshold.
- t_i The temperature that was above/below the alert threshold.
- a The alert temperature threshold.
- s The duration of time, in minutes, the temperature was sustained.

For example, if there were 5 data points to calculate the degree minutes of and they were, 12.3, 15.9, 16.2, 14.7 and 14.9 degrees, each of these temperatures were recorded at 2 minute intervals and the high alert temperature threshold was 12.6 degrees, then the degree minutes temperature above the upper alert threshold would be 22.6 degree-minutes.

Displaying statistics

The statistics displayed on the Summary tab can be configured in the Options dialog. Refer to the chapter "[Summary Statistics](#) on page 99". By default, all statistics are displayed on the Summary tab.

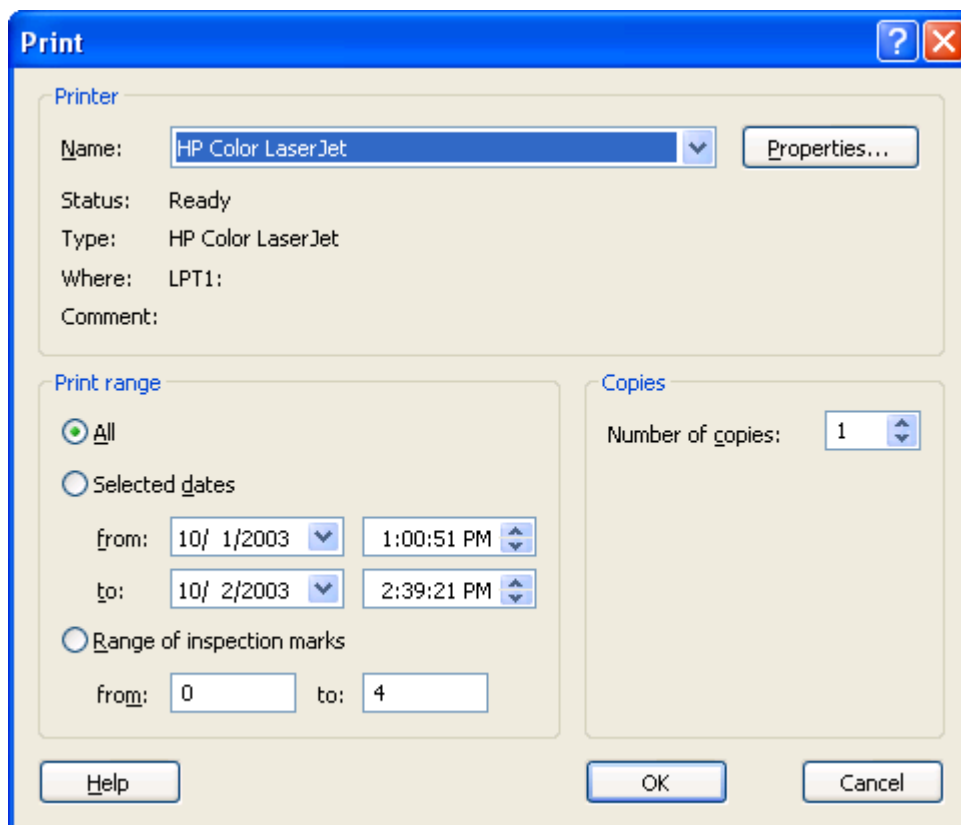
Statistics can also be displayed on the chart, underneath the legend. See chapter "[Chart Statistics](#) (on page 99)" for more information about configuring the chart statistics.


If there are readings beyond the limits of the sensor within the time interval being displayed, the statistics for the relevant interval will be displayed as "***".

Printing the results

Printing from LogTag Analyzer is slightly different to printing from other common Windows software, as the printer functions in terms of range of information to print rather than range of pages. This technique allows you to focus on what you want printed rather than the pages showing the information.


You can choose to print all of the information, select a range of dates and times to print from or select a range of "inspection" marks. This could be a very important for transit monitoring since post trip and pre-event data are not significant to a discussion or dispute centering on a humidity and/or temperature maintenance issue.



The print window can be brought up by simply clicking once on the "Print" icon () located on the [toolbar](#) (see "Menus and Toolbars" on page 124) or by clicking the "Print..." menu item from within the File menu.

Sending a file by e-mail direct from Analyzer

You can send files of interest to another person, by e-mail, directly from the software without the need to exit to your e-mail software or to deal with file attachments.

While you have the file of interest open and being displayed on the screen, just click once on the "Send Mail" icon () located on the [toolbar](#) (see "Menus and Toolbars" on page 124) and your e-mail software will pop up with the file already inserted as an attachment. Type the desired e-mail address to send the file of interest to, add any message that you wish to include, and then click "Send". That is all.

Clicking the "Send..." menu item within the File menu will achieve the same results as clicking the "Send Mail" icon as previously described.

Note, the recipient of the file will also need to have a copy of the LogTag Analyzer software to open and view the file that you sent. LogTag Analyzer software is free and can be downloaded from the LogTag Recorders Internet site, www.logtagrecorders.com.

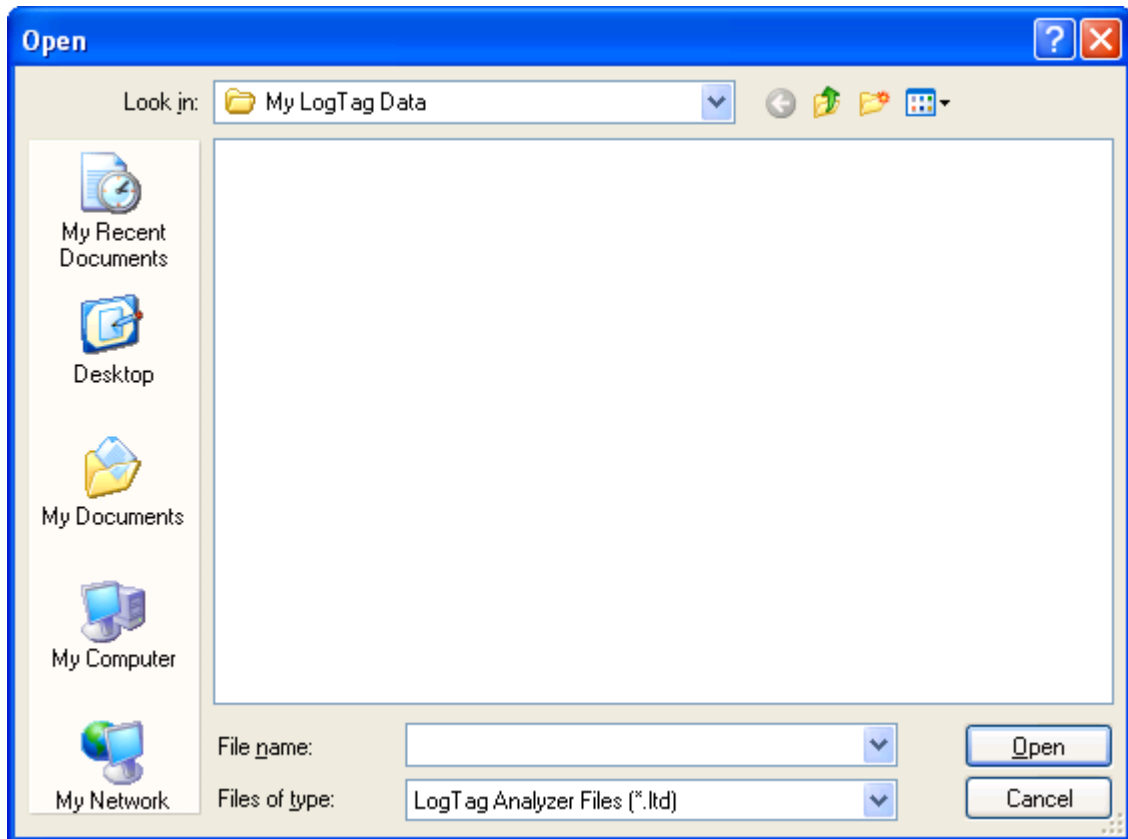
If you want to attach your data files in file formats other than the LogTag Analyzer format, specify the desired file formats in the [Exports and Reports](#) (on page 117) section in the [Options](#) (see "Customising the software" on page 96) Window. The data files will automatically be attached to your e-mail(s) in the desired formats.

To send a Multi Chart configuration, the configuration must first be saved to disk (see chapter Saving a Multi Chart configuration). The "Send Mail" command will automatically attach the multi chart configuration file, the annotation file (if annotations have been added) and the relevant individual data files to your e-mail(s).

Note: You can automatically send e-mails and upload files to ftp sites using LogTag Analyzer's automated SMTP and FTP functionality. Please see [Automatic Uploading to FTP sites and automatic e-mailing](#) on page 102 for further details.

Calling up previous results

The files that have most recently opened and displayed are listed towards the bottom of the "File (see "File Menu" on page 125)" menu. To open other files, click the "Open" icon (📂) located on the [toolbar](#) (see "Menus and Toolbars" on page 124), which will display the "Open" file dialog similar to the following picture and allows the user to locate and open one or more files of interest.



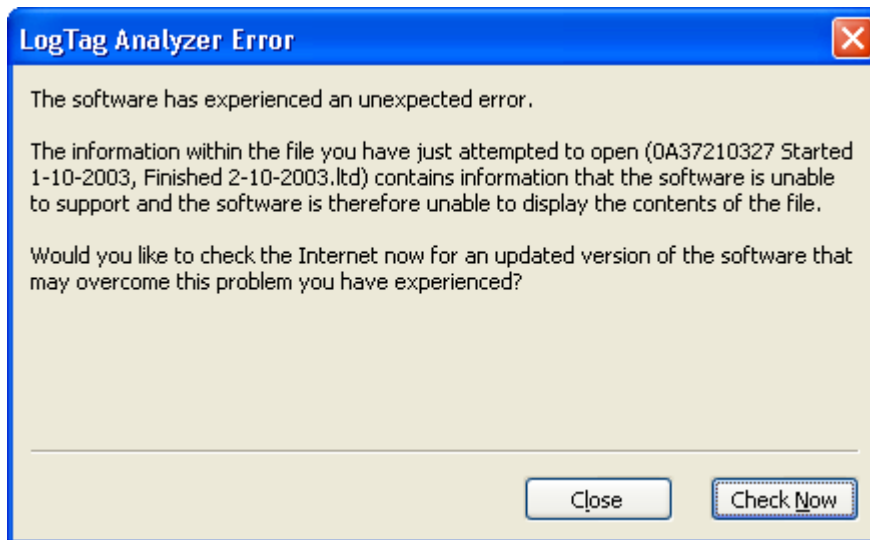
You can open files from all locations accessible by the Windows™ Operating System, including network and ftp locations. Please refer to your operating system's help for more information.

Clicking the "Open..." menu item within the File menu will achieve the same results as clicking the "Open" icon as previously described.

After the software has been installed for the first time, there are two recently opened files listed in the "File" menu, even though no files have been opened yet. These are sample files, which were installed along with the software so that users can see an example of information that can be retrieved from LogTags. These files are not required for the correct operation of the software and therefore may be deleted at any time.

You can also open files directly from within Windows™ Explorer or from within your e-mail software by double clicking on the file or right clicking and selecting "open" from the context menu. When opening files from e-mail programs that store attachments in temporary folders such as MS Outlook, you may be asked to store the file in a new location when performing further actions such as selecting multi-charts or uploading to FTP sites.

If the software is unable to open the file, it will display an error similar to the following picture. Clicking on will start the process of checking the Internet for an updated copy of the software.

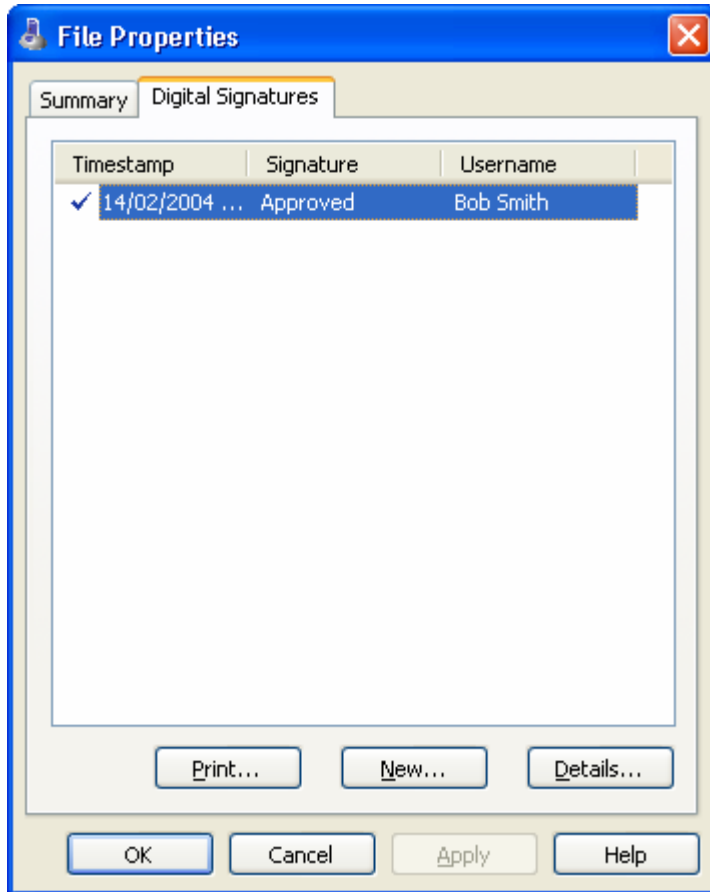


Digital signatures

Support for digital signatures is primarily provided for compliance with the US FDA 21 CFR Part 11 regulation - Electronic records and electronic signatures. Various industries however, may find inclusion of digital signatures beneficial towards their quality control and assurance systems.

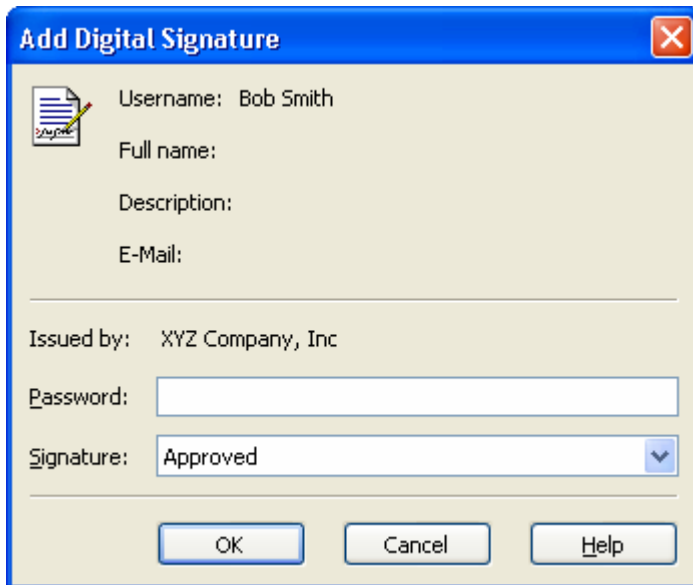
Digital signatures allow users to include their digital signature within a LogTag Analyzer file along with a meaning/reason for the inclusion of the digital signature. To add digital signatures to LogTag Analyzer files, the copy of the LogTag Analyzer software being used must be connected to the LogTag User Server software. For more information about how to get the software to connect to the LogTag User Server software see the "[User Server](#) (on page 121)" set of options settings and/or contact your local network administrator.



While the file that the digital signature is to be added to is open and currently selected, add a digital signature by clicking on the "Digital Signatures" icon (🔑) located on the [toolbar](#) (see "Menus and Toolbars" on page 124), which will display the "File Properties" dialog with the "Digital Signatures" tab already activated, similar to the following picture.



Then click [New...](#) to begin the process of adding a digital signature to the file. If [New...](#) is disabled, moving the mouse pointer over [New...](#) and leaving it still for a short time will reveal the reason why the button is disabled.

Once the "Add Digital Signature" dialog is visible, enter your LogTag Analyzer user password and then select the meaning for the digital signature that is being added.

A screenshot of the "Add Digital Signature" dialog box. The dialog has a blue title bar with the text "Add Digital Signature" and a red close button. Inside, there is a document icon with a pencil. Below the icon are four text labels: "Username: Bob Smith", "Full name:", "Description:", and "E-Mail:". Below these is a horizontal line. Then, "Issued by: XYZ Company, Inc" is displayed. Below that is a "Password:" label followed by a text input field. Below the password field is a "Signature:" label followed by a dropdown menu showing "Approved". At the bottom are three buttons: "OK", "Cancel", and "Help".

Click  to permanently add the digital signature to the file or  to not add the digital signature. Multiple digital signatures from the same and/or different users to LogTag Analyzer files may be added to a single file.

How secure is my data

All LogTag files are encrypted and contain checks to detect if the file has been tampered with since it was originally created. If the software detects that a file has been tampered with, even by only one character or has become corrupted and therefore the data within does not represent the data originally retrieved from the LogTag, the software will not open the file and display the information within.

An additional validation and security feature of the LogTag is that it will automatically insert error detection codes periodically during recordings, which are used to detect corruption or manipulation of data. Whenever these detection codes for a block of recordings fails its integrity validation test, the relevant readings become marked as non validated readings. Non validated readings are displayed differently to validated readings to indicate that they have failed their integrity test.

Non validated recordings typically occur in the scenarios following scenarios:

- 1 One or more readings within the non validated block of readings is not the genuine recorded value.
- 2 The LogTag has been configured to perform continuous recordings and once the memory within the LogTag has been fully used, will cause older recordings to be overwritten, which will thereby invalidate the error detection code and integrity check for the block of readings the older recordings been overwritten exist within. In this scenario, it is not a problem that these recordings are non validated, rather it means that the particular block of recordings has only the validation and integrity protection offered by the communications between the LogTag and the computer system, which is typically the same, if not better than the level of


protection offered by every other brand of logger available in the global market, that LogTag Recorders know of.

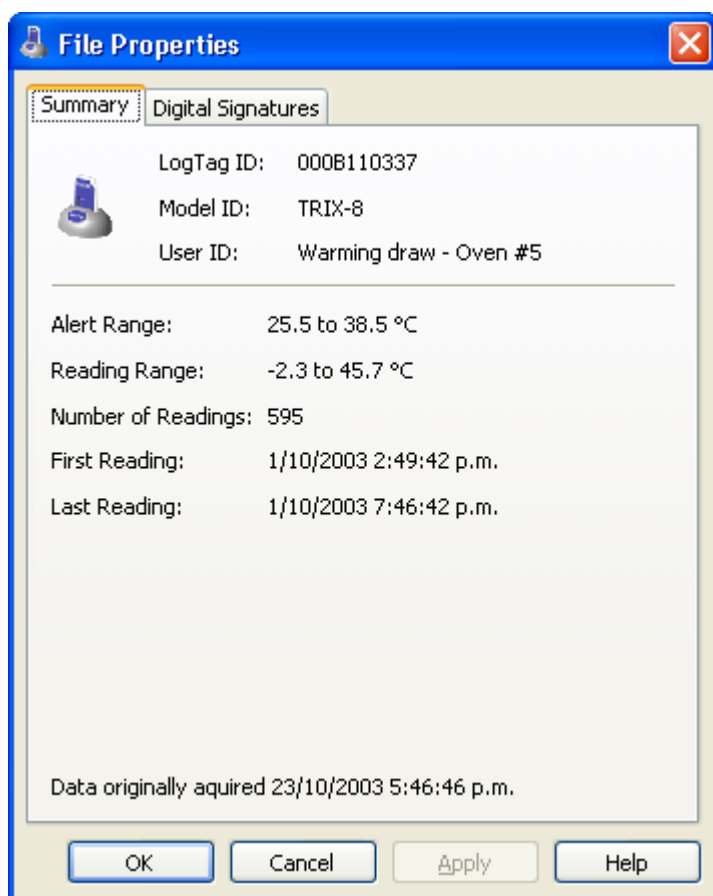
- 3 A communications or hardware failure has occurred during the transfer of the data from the LogTag to the computer. In this scenario the problem is typically resolved by trying to retrieve the recordings from the LogTag again, while ensuring the contacts on the back of the LogTag are clean, that the contacts within the Interface Cradle are clean and that the contacts within the Interface Cradle are returning evenly to their normal position when the LogTag is removed.

Since the software does not modify any of the recorded data within a LogTag file at any time, if the software can open the file, regardless of how long ago it was created, the contents of the file will still represent the original recorded information retrieved from the LogTag.

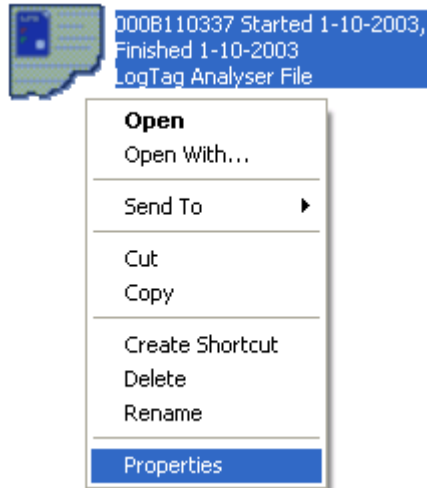
Therefore, the files created by the LogTag Analyzer software meet all criteria for data integrity and data security as set forth in the US FDA 21 CFR Part 11 regulations. The firmware code that is embedded in the processor chip of each LogTag cannot be extracted or reverse-assembled. Accordingly, data sets that are recorded on the memory within the LogTag cannot be downloaded or modified except by being transferred to a LogTag file. There is no way to interfere with the process of the transfer of information between the LogTag and the software in such a way that data integrity would be compromised.

Viewing file properties

The file properties, which is accessed through the [File Menu](#) (on page 125) and/or through the  toolbar command, provides users with a brief summary about the data included within the file, as indicated in the following picture.



This file properties information is also available for viewing directly through the Windows Explorer software that was included with the Windows operating system, without the need to have the LogTag Analyzer software open. To view the information, simply locate the file of interest with Windows Explorer and, using the mouse, click the right button over the file and select the "Properties" menu item, with the left mouse button, from the menu that will be displayed, similar to the following picture.




Select the "Summary" tab and you will see the summary of the data contained in the file. If the contents of the file require a newer version of software to open and view, have become corrupted or have been modified then the "Summary" tab will not be visible.

If the LogTag has a limited number of trips left, this is also indicated here.

CHAPTER 6

Customising the software

Many of the features offered by the software can be customized to suit your specific requirements.

The customization is performed in the Options dialogue windows, which can be opened by clicking on the  icon in the toolbar or by selecting **OPTIONS** from the **EDIT** menu.



This will open the options window.

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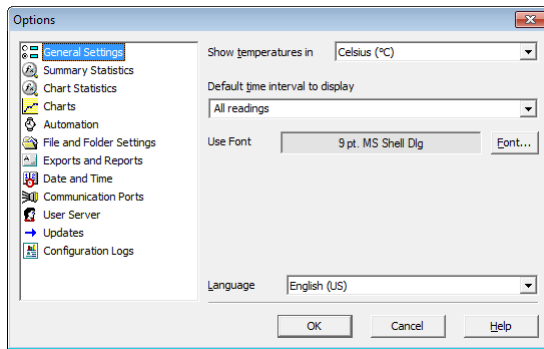


Figure 22: General Option Settings

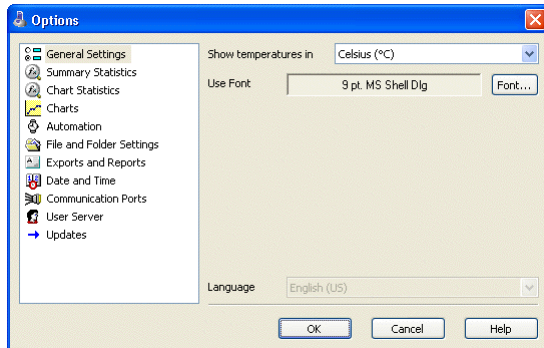
To change any of the options, select the corresponding category in the left pane of the options window. You will then see what can be changed in the right pane. Most of the options available will be applied as soon as you click on **OK**. For example, if the language selection and/or the date format are changed, all windows that are open will be updated without the need to restart the software. Please note, however, that these settings will only be permanently stored once you exit the LogTag Analyzer software.

All options, excluding the User Server settings, are stored on a per user basis. Therefore, if more than one user operates on a single workstation the software will allow different customization settings for each.

Some of the display settings, such as decimal point and date/time formats, are not controlled by the LogTag Analyzer's user settings dialogues, but rather by the regional settings of the Windows™ Operating System. These can usually be found in the Control Panel under "Regional and Language Options". Please refer to your Operating System's documentation for further assistance.

General Settings

The General Settings options allow you to change various preferences that will effect the overall appearance of the information shown by the software.



Show temperatures in

This will determine what units of measurement temperatures will be displayed in. The options include:

- Fahrenheit (°F)
- Celsius (°C)
- Kelvin (K)

Use Font

Determines what font to use to display and print information about LogTag recordings and is changed through the **Font...** button. A sample of the font selected will be shown to you on the screen.

Default display time interval

This drop down box allows you to set the default time zoom level. You can set this to:

- All readings
- From first reading to first inspection/download mark
- From last inspection/download mark to last reading

The setting you select here will apply to all currently open windows as well as to newly opened windows, where a file is opened or a recorder is downloaded.

The section about [Inspection and download mark zoom](#) on page 63 explains how this feature works.

Language

This instructs the software which language for the software to use for all the information it displays and prints.

Summary Statistics

This option allows you to specify which statistics are displayed in the Summary tab. The statistics can be enabled or disabled by clicking the tick box for the relevant item in the list.

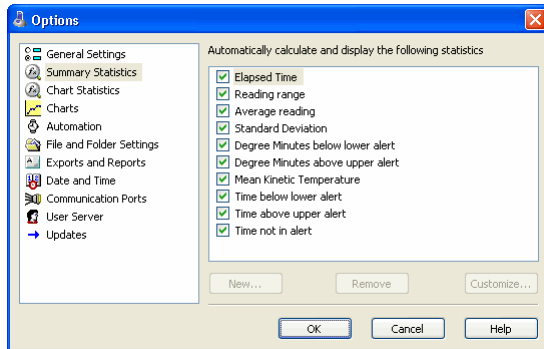
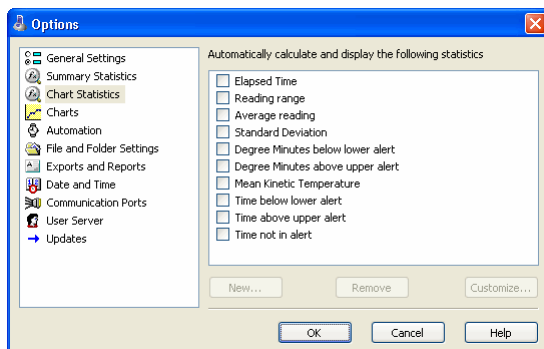


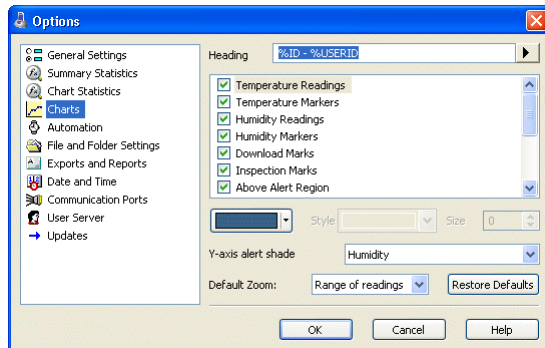
Chart Statistics

This option allows you to specify which statistics are displayed on the charts. The statistics can be enabled or disabled by clicking the tick box for the relevant item in the list.



Charts

The Charts options allow the various aspects of the charts that display the readings recorded by LogTags to be customized. At the base of the Window is a color selector and other relevant controls, which apply to the highlighted item on the list in the window.



Some experimentation with these settings will show very quickly how they work. Select a color in the color panel, click , and then go to the Data screen to see the results of the change.

Note that the three regions on the chart display can be controlled. LogTags can be configured to detect over and under conditions based on a series of temperature and/or humidity measurements. When the data is displayed graphically on the chart, these become color background regions. These are different colors for "at or above high alert limit", "between high alert limit and low alert limit" and "at or below low alert limit". This allows out-of-range and in-range data to be spotted easily on the listed or charted data.

By selecting a line style for the "above high alert limit" and "below low alert limit" regions you can improve the readability of the charts on black and white printouts.

You can choose to include or exclude non-validated data from the chart display by checking or un-checking the "Non-validated readings" check box in the list. If non-validated data is to be displayed, it can either appear just like validated data, or you can define a different colour and marker style to be used. Check the check box "Display non-validated readings differently:" to display non-validated data in the selected colour/style.

Please refer to section [How secure is my data](#) (on page 92) for a detailed explanation of non-validated data.

When readings beyond the specified measurement range of a LogTag have been recorded, the display will indicate this using the following techniques:

- The Chart display will not plot the out of range values and the chart curve will appear with broken lines.
- The Data display will include "<" or ">" for each reading that is beyond the specification range.
- The Statistics display will include "***" for each statistic that includes readings that are beyond the specification range.

If the option "Show readings beyond specification" is enabled, all reading values will be displayed, even if the recorded readings are beyond the operating range of the LogTag.

For example, the TRIX-8 has a published minimum temperature of -40°C. Temperatures to -41.5°C may be displayed if the "Show readings beyond specification" is enabled, however the accuracy of recordings between -40 and -41.5 is unknown. Temperatures between -40 and -41.5 will be displayed even if the temperature falls to a much lower actual value.

LogTag Recorders provides no guarantee of temperature reading reliability or accuracy beyond the published range for a given product and the "Show readings beyond specification" option is not recommended to be enabled for general use.

The "Elapsed Time" option switches the x-Axis display between date/time and elapsed time since the beginning of the display period.

"Show Min/Max/Average Tab" shows up to three additional tabs in a multi chart with graphs representing Minimum, Maximum and Average readings (See [Combining Charts into a single chart](#) on page 76.)

Most of the Chart Options settings can be enabled or disabled by clicking the tick box for the relevant item in the list.

Automation

The Automation options determine what the software does automatically when it detects a LogTag in the Interface Cradle.

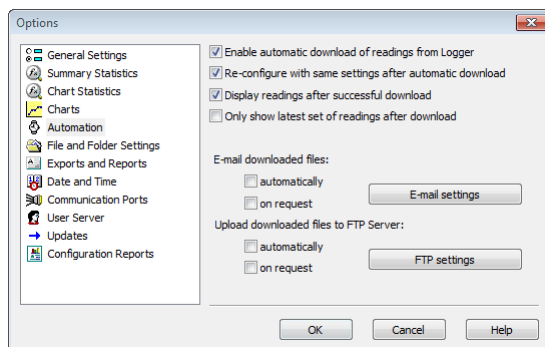


Figure 23: Automatic options pane

Enable automatic download of readings from LogTags

Instructs the software to automatically retrieve recordings from a LogTag when it is placed in an Interface Cradle that is connected to the computer. While the software is automatically retrieving recordings from a LogTag an animated picture will appear on the screen to let the user know this action is being performed. With this function enabled, it is not necessary to go through the download wizard procedure. This function is very useful when working with multiple LogTags.

This function can be temporarily disabled by holding down the "Ctrl" key on the keyboard while a LogTag is placed in the Interface Cradle.

Reconfigure with same settings after automatic download

When this tick box is checked, a LogTag will be automatically configured with the same settings as for the previous trip, once the data have been downloaded. This option is greyed out if the [Enable automatic download of readings from LogTags](#) on page 101 option is disabled.

Display readings after successful download

Instructs the software to display the recordings after downloading them from the LogTag. The default display format is determined by the "Display" setting in the "[File Settings](#) (see "File and Folder Settings" on page 113)" option. This option will affect readings downloaded through the automatic download feature and when downloading through the Wizard approach.

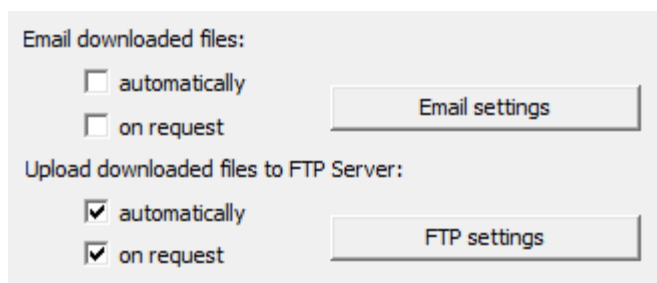
Only show the latest set of readings after download

Instructs the software to only display the most recently retrieved set of readings on the screen. If there are multiple windows of readings open and being displayed, all of these windows will therefore be automatically closed and only the most recently retrieved set of readings will be displayed.

Automatic e-mailing and uploading to FTP sites

In the same way that LogTag Analyzer files are saved to a local hard drive, they can be automatically uploaded to an FTP site and automatically be e-mailed every time data from a LogTag are downloaded.

FTP (File Transfer Protocol) is a standard which describes how files are transferred between different computers and networks. SMTP (Simple Mail Transfer Protocol) is used for e-mail and describes how electronic mail is distributed across networks. Detailed explanations of how both FTP and SMTP work are beyond the scope of this manual, however if you wish to learn more about FTP, SMTP, e-mail and networking please refer to one of the many good articles available on the Internet, such as the ones on Wikipedia or the various FTP and SMTP client providers.



The screenshot shows a dialog box with two sections. The first section, 'Email downloaded files:', has two checkboxes: 'automatically' (unchecked) and 'on request' (unchecked). To the right of these checkboxes is a button labeled 'Email settings'. The second section, 'Upload downloaded files to FTP Server:', has two checkboxes: 'automatically' (checked) and 'on request' (checked). To the right of these checkboxes is a button labeled 'FTP settings'.

In the Automation dialogue you can select for both FTP and e-mail whether you wish to make the process automatic, on request, or both. If you activate manual uploading/e-mailing, but not automatic uploading/e-mailing, you need to press a button on the toolbar to upload or send the file in the currently active window. This button is in the form of a globe symbol, which also indicates which setting is currently active.



If the globe is active, and a small "F" is depicted in the lower right corner, automatic FTP uploading is activated.



If the globe is active, and a small "e" is depicted in the upper right corner, automatic e-mailing is activated.



If the globe is active, and both the "F" and the "e" are depicted, both automatic FTP uploading and e-mailing are activated.



If the globe is active, but no letter is displayed, neither automatic FTP uploading nor automatic e-mailing are activated. Manual FTP or e-mail functions may still both be active.

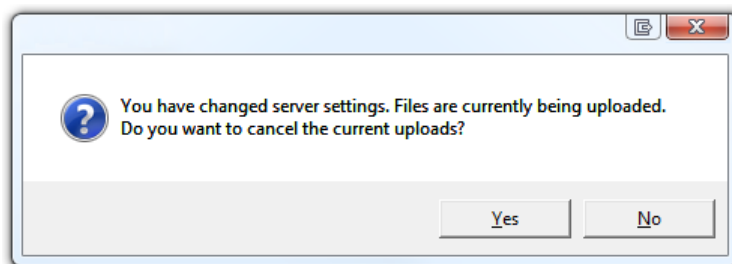


If the globe is grayed out, neither automatic nor manual FTP or e-mail functions are available.

When neither box for e-mailing has a tick, no e-mailing will be possible. Similarly, when neither box for FTP upload has a tick, no uploading via FTP will be possible, however in both cases the settings data will still remain stored.

Clicking on the FTP or E-mail settings buttons brings up the dialogue windows for the [Basic FTP settings](#) (on page 109) or the [Basic SMTP and e-mail settings](#) (on page 104). Usually this information will be provided by your network administrator. If your company has specific IT policies you may not be allowed to configure the settings yourself. In this case, or if your network administrator has already created a company wide access for multiple users, you may be provided with a settings file called "UploadSettingsU.dat". Your network administrator will detail instructions how to import these settings into LogTag Analyzer.

Changing FTP or e-mail settings while files are being uploaded will display following dialogue box when clicking OK to close the Options window.



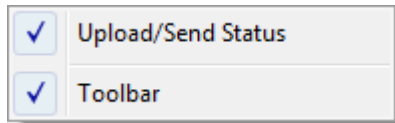
Click "yes" to cancel the current upload, and "No" to continue uploading to the new location.

When uploading or e-mailing files a status window is displayed at the bottom of the LogTag Analyzer window.

Server	File name	Upload/Send Status
smtp.yourisp.com		Disconnected
smtp.yourisp.com	6000017083 Started 12-05-2009, Finished 14-05-2009 Copy 2.ltd	Successful
ftp.yourftpsite.com		Disconnected
ftp.yourftpsite.com	6000017083 Started 12-05-2009, Finished 14-05-2009 Copy 2.ltd	Successful
smtp.yourisp.com		Disconnected
smtp.yourisp.com	6000017083 Started 12-05-2009, Finished 14-05-2009 Copy 2.ltd	Successful

For Help, press F1. To use a LogTag, press F2.

This window shows status messages related to the FTP and e-mailing functions. The window can be hidden by right clicking anywhere in it and de-selecting the Upload/Send Status box. It can be re-displayed by right clicking anywhere on the menu or toolbar and selecting the Upload/Send Status box.



Note: The manual e-mail function described here is different from the "send mail" button on the toolbar. The "send mail" button invokes your standard e-mail program, attaches the data file, requires you to fill in an e-mail address and press the send button. The manual e-mail function via SMTP does not use your standard e-mail program, but the configured SMTP settings and requires no further action once the globe button on the toolbar is pressed.

Note: Automatic upload via FTP and automatic e-mailing only work if a file is created by downloading data from a LogTag in the interface. If the uniqueness settings in the "File and Folder Settings" are set so that certain conditions do not result in creation of a new file, no file is uploaded or e-mailed either.

Files with formats other than the native LogTag Analyzer format will only be e-mailed or uploaded automatically if specifically selected in the FTP or SMTP basic settings. This may be different from the settings in the [Exports and Reports](#) (on page 117) option dialogue.

Note: If you upload a file via the manual or automatic FTP function, any file that already exists on the server with the same name will be overwritten. It is up to you to make sure files are created with unique file names.

Basic SMTP and e-mail settings

Disclaimer

The distribution of unsolicited e-mails provides huge inconvenience to anyone with an e-mail account. LogTag Analyzer's e-mail function allows the automated e-mailing of files to a large number of recipients simultaneously without user interaction. Some countries consider this as spam and will prosecute offenders.

It is therefore of the utmost importance that you as the sender obtain permission from the recipients to send these files. LogTag Recorder provides this functionality as a feature assisting in the distribution of information between various users within an organization and will not assume responsibility for any misuse of its software.

Setting up automated e-mailing requires two main pieces of information:

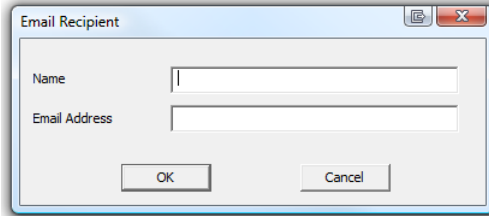

- The name of the SMTP server which you wish to use to send the e-mails and
- A valid user name and password for the SMTP server.

Once you click on the "SMTP Settings" button a dialogue window will appear, allowing you to enter the configuration data for the SMTP e-mail function. A lot of these settings will be familiar to you from your standard e-mail program.

Figure 24: Basic SMTP settings

If you have been supplied with access data by your network administrator we suggest you print the following table, enter the data into the fields provided and keep it in a safe place.

Field	What to enter	Your details
SMTP Server	Enter the name of the SMTP server you were given by your network administrator	
SSL	SSL stands for Secure Sockets Layer. You may be required to tick this box if your SMTP server requires a secure connection. Typically this setting is not required, and your network administrator will set this up if required.	
Use name and password	Some SMTP servers require an authentication method, especially if the SMTP server you are using is not provided by your ISP, e.g. if you are using e-mail accounts from a hosted site. In this case you need to tick this box and provide login data for this SMTP server. Quite often, though, you will not be required to use Authentication.	
User Name	Enter the user name you have been allocated by your network administrator required for Authentication. Please note that for authentication this often needs to include a full e-mail address rather than just the SMTP login.	
Password	Enter the password you have been given by your network administrator required for Authentication.	

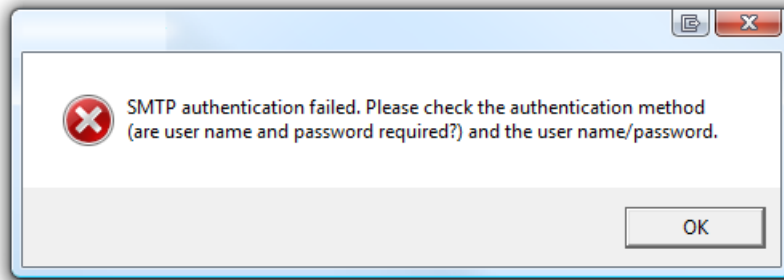
Name	Enter the name as it should appear in the recipients e-mail program. This can be your name or someone else's name.	
E-mail address	Enter the e-mail address that the recipient can reply to by pressing the reply button of his e-mail program. This can be your e-mail address, or someone else's address.	
Recipients	<p>Enter the e-mail addresses of the intended recipients. Pressing the "add" button will bring up a new entry window where you can enter a recipient's name and e-mail address.</p>  <p>You can also highlight a recipient's name and edit the data or remove it from the list.</p>	
Subject Line	Text entered in this line will be displayed in the subject line of the e-mail when displayed on the recipients' e-mail programs. Clicking on the  button will allow you to specify some file related information which will be entered into the subject line at the time of sending. You can enter your own text with the file related information.	
Advanced settings	Press this button to display a new dialogue window where you can enter advanced SMTP settings like port numbers, retries and log files. Refer to the section about Advanced SMTP settings (on page 108).	
Attach file in the following formats	Select all files that you wish to attach when the e-mail is sent. Each file ticked here will be created, regardless of the settings made in "EDIT - OPTIONS - EXPORTS AND REPORTS".	
Store pending uploads between sessions	This check box is ticked by default. If a file send is interrupted due to a network error LogTag Analyzer will re-attempt to send the file when it is next started. If the feature is disabled, any files not sent when the software is closed will have to be manually re-submitted.	

As a minimum you only need to provide an SMTP server address and one recipient e-mail address for this function to work.

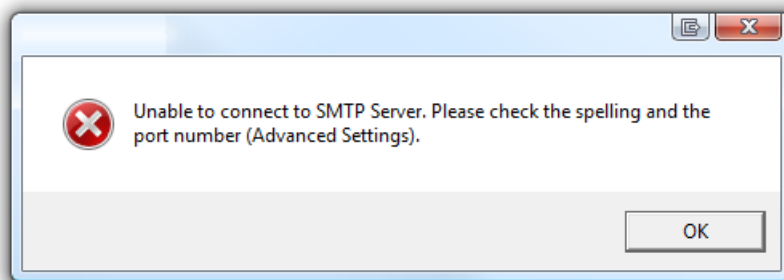
Every time you make changes to these settings you should perform a test by pressing the "Send Test e-mail" button. LogTag Analyzer will

- check you have provided valid connection data,
- send a test e-mail to the e-mail addresses in the recipient list.

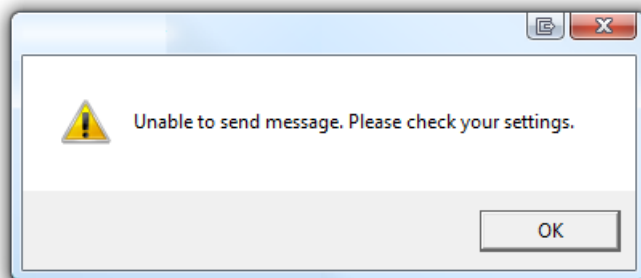
If any of these actions fail, LogTag Analyzer will display one of the following error messages:



In this case the SMTP server requires authentication, and the data provided were not correct. Please enter the correct authentication data.



This error message is displayed if LogTag Analyzer could not connect to the specified SMTP site because it could not find it. This could be due to internet connectivity issues, due to an incorrect port name or due to a mis-spelt server name.

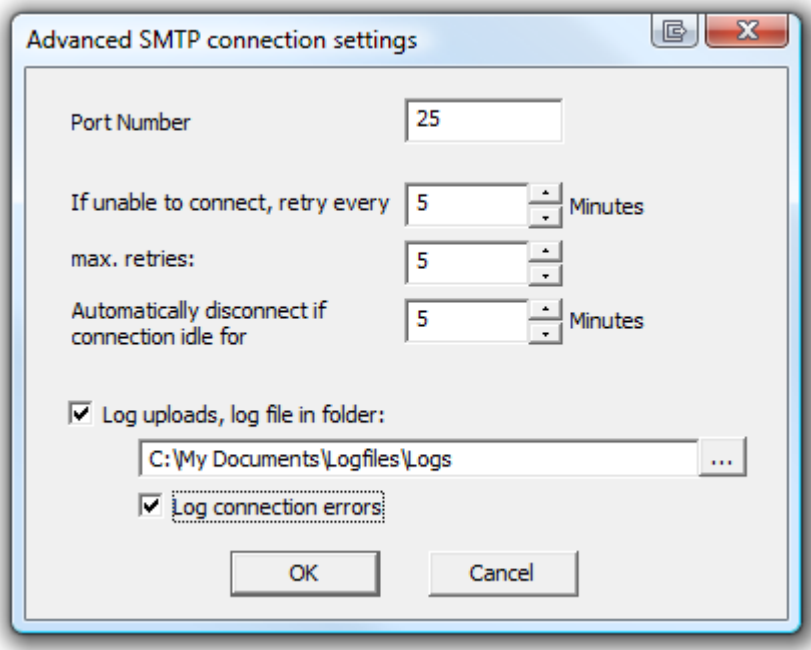


This error message is displayed if one or more of the addresses in the recipient list have an incorrect mail format (i.e. are not in the format a@b.c). LogTag Analyzer can only check for the correct format of the addresses, but not for correctness of the recipients e-mail addresses. Please note if you do not provide a correct return address, you may not know that intended recipients are not receiving the messages.

We recommended you add your own e-mail address to the list of recipients. This way you get feedback if your e-mail has been sent correctly in your e-mail program. It is also good practice to enter a valid and correct e-mail return address for yourself. Some ISP's will not relay messages without a sender's address.


Advanced SMTP settings

Clicking on the "Advanced Settings" button in the SMTP settings dialogue displays following Window:



This will allow experienced users to change additional settings normally associated with FTP transfers.

Field	What to enter
Port Number	<p>The default port for providing SMTP connections is 25. Some network administrators change the port number on their SMTP servers to increase security and stop hacking attacks. If your network administrator has advised a different port for connection, please enter it here.</p> <p>In this case you may also need to change the settings of you firewall.</p> <p>If you wish to learn more about this topic please see any of the published articles on networking and TCP/IP available on the Internet.</p>
Retry	<p>If a connection cannot be established, LogTag Analyzer will retry to e-mail the file again after the number of minutes entered here. This helps eliminate e-mail errors due to intermittent Internet connection errors.</p>
Maximum Retries	<p>Enter the number of times LogTag Analyzer should try to e-mail the file if previous attempts have not been successful.</p>
Automatic Disconnect if idle	<p>LogTag Analyzer will keep the connection to the SMTP server active, even if currently no files are being e-mailed. This avoids having to exchange password and login information every time a file is uploaded therefore providing faster uploads, especially if only a slow Internet connection is available. After a certain amount of inactivity the connection is dropped to save resources. Enter the time after which you wish LogTag Analyzer to automatically disconnect from the SMTP server.</p>

Log uploads	If a tick is placed in the box next to "Log uploads" the message exchange between the SMTP server and LogTag Analyzer is recorded into a file. These files are automatically named "YYYY_M_D_LogTag Analyzer_SMTP.log", you can specify a location where the files are created, or click  to browse to a location of your choice.
Log Connection errors	Tick this box if you wish connection errors to be logged. This is recommended if you frequently experience upload errors and you wish to discuss this issue with your network administrator.

Click OK to store the settings or cancel to abort.

Basic FTP settings

You will require two main pieces of information to upload data to an FTP site:

- The name of the FTP site and a directory on the site in which the files will be stored once uploaded and
- A valid user name and password allowing you access to this directory.

Once you have clicked the "FTP Settings" button a dialogue window will appear, allowing you to enter the configuration data for the FTP site access.

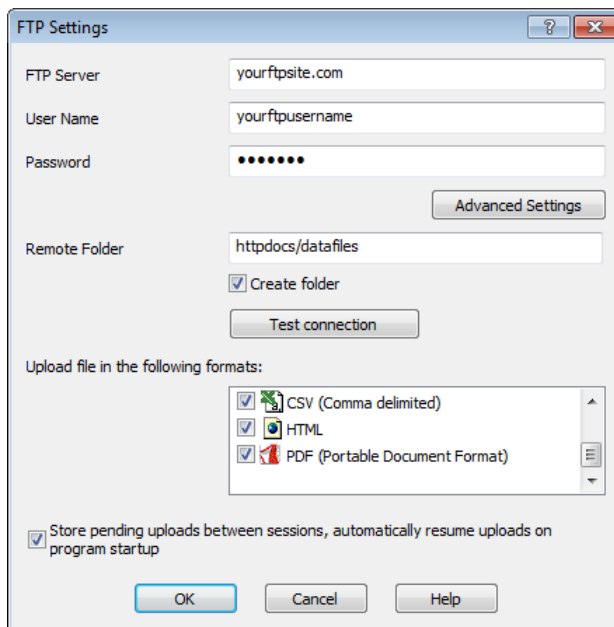


Figure 25: Basic FTP settings

If you have been supplied with access data by your network administrator we suggest you print this page, enter the data into the fields provided and keep it in a safe place.

Field	What to enter	Your details
FTP Server	Enter the name of the FTP site you were given by your network administrator	
User Name	Enter the user name you have been allocated by your network administrator	

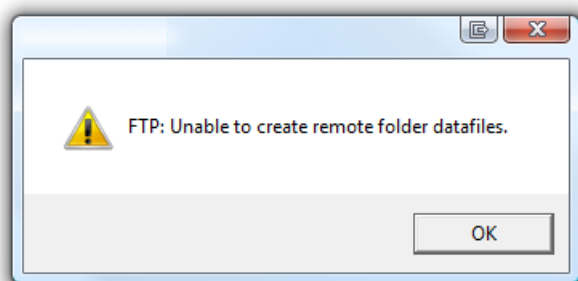
Password	Enter the password you have been given by your network administrator	
Remote folder	Enter the folder in which the data files should be uploaded. Please note that not all FTP servers allow creation of files or folders in the root directory. Please discuss any of your requirements with your network administrator.	
Create Folder	Tick this box if the remote folder is not yet present on the FTP site and you wish to create it.	
Upload file in the following formats	Select all files that you wish to have uploaded to the FTP site. Each file ticked here will be created, regardless of the settings made in "EDIT - OPTIONS - EXPORTS AND REPORTS".	
Advanced settings	Press this button to display a new dialogue window where you can enter advanced FTP settings like port numbers, retries and log files. Refer to the section about Advanced FTP settings (on page 111).	
Store pending uploads between sessions	This check box is ticked by default. If a file upload is interrupted due to a network error or because the FTP site is temporarily unavailable, LogTag Analyzer will re-attempt to upload the file when it is next started. If the feature is disabled, any files not uploaded when the software is closed will have to be manually re-submitted.	

All of the above settings are required to make a successful connection to an FTP server.

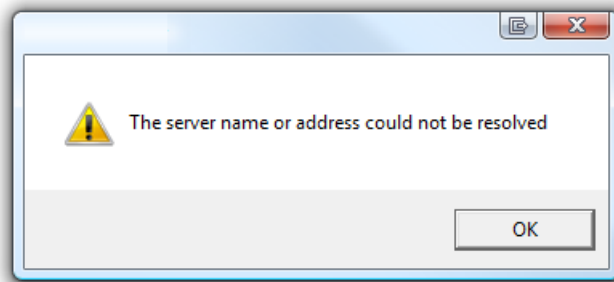
Every time you make changes to these settings you should perform a test by pressing the "Test connection" button. LogTag Analyzer will

- check you have provided valid connection data,
- if necessary create the folder you have specified and
- put a small test file in the selected location.

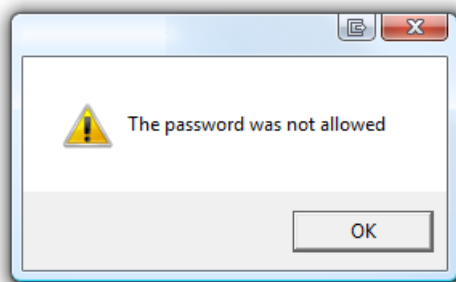
If any of these actions fail, LogTag Analyzer will display one of the following error messages:



In this case the remote folder could not be created. Please select a different folder name or change to a permitted location.



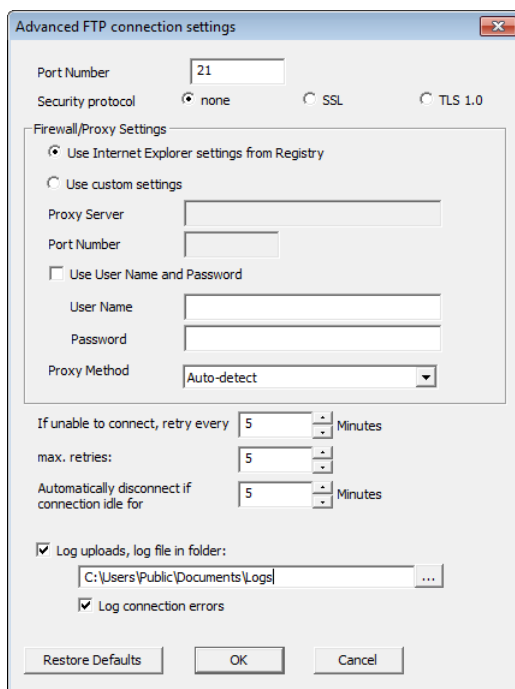
This error message is displayed if LogTag Analyzer could not connect to the specified FTP site because it could not find it. This could be due to internet connectivity issues, due to an incorrect port number or due to a mis-spelt name.




This message appears when either user name or password are incorrect.

Advanced FTP settings

Clicking on the "Advanced Settings" button in the FTP settings dialogue displays following Window:



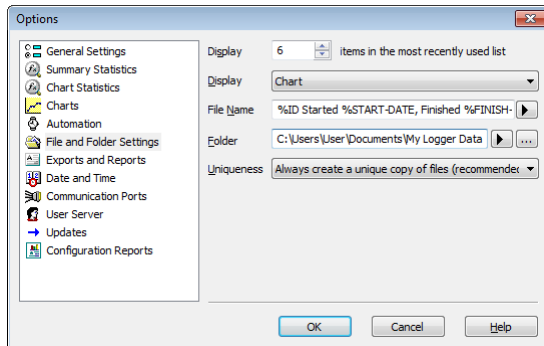
This will allow experienced users to change additional settings normally associated with FTP transfers.

Field	What to enter
Port Number	<p>The default port for providing FTP connections is 21. Some network administrators change the port number on their FTP servers to increase security and stop hacking attacks. If your network administrator has advised a different port for connection, please enter it here.</p> <p>In this case you may also need to change the settings of you firewall.</p> <p>If you wish to learn more about this topic please see any of the published articles on networking and TCP/IP available on the Internet.</p>
Security Protocol	Choose between none, SSL or TLS 1.0
Firewall/Proxy Settings	Use the settings from the registry or choose your own settings. Please discuss these settings with your network or IT administrator.
Retry	If a connection cannot be established, LogTag Analyzer will retry the file upload after the number of minutes entered here. This helps eliminate upload errors due to intermittent Internet connection errors.
Maximum Retries	Enter the number of times LogTag Analyzer should try to upload the file if previous attempts have not been successful.
Automatic Disconnect if idle	LogTag Analyzer will keep the connection to the FTP server active, even if currently no files are being uploaded. This avoids having to exchange password and login information every time a file is uploaded therefore providing faster uploads, especially if only a slow Internet connection is available. After a certain amount of inactivity the connection is dropped to save resources. Enter the time after which you wish LogTag Analyzer to automatically disconnect from the FTP server.
Log uploads	If a tick is placed in the box next to "Log uploads" the message exchange between the FTP server and LogTag Analyzer is recorded into a file. These files are automatically named "YYYY_M_D_LogTag Analyzer_FTP.log", you can specify a location where the files are created, or click  to browse to a location of your choice..
Log Connection errors	Tick this box if you wish connection errors to be logged. This is recommended if you frequently experience upload errors and you wish to discuss this issue with your network administrator.

Click OK to store the settings or cancel to abort. You can restore default settings by clicking on "Restore defaults".

File and Folder Settings

The File and Folder Settings options help you manage the LogTag data files.

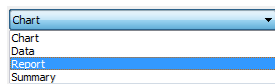


Display X items in my most recently used list

This determines how many of the most recently accessed files are listed in the "File (see "File Menu" on page 125)" menu for quick access to be opened and viewed again. Once this number of files has been reached, the reference to the oldest file opened will be removed and the most recently opened file will be added to position 1. Only the file reference is removed from this list, the actual file is not deleted. Changing this setting will take effect the next time LogTag Analyzer is started.

Display


This determines how the information retrieved from a file and/or LogTag will be first displayed. All other ways of displaying information will still be available regardless of which is selected here.

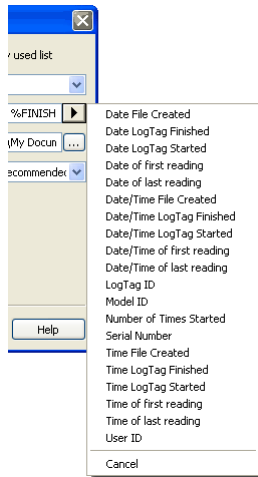


- Chart; this will display the data in a time versus humidity and/or temperature chart.
- Data; this will display a list grid (spreadsheet style) of the time versus humidity and/or temperature data.
- Report; this will display a condensed overview of the data including averages, ranges, alert results, LogTag identification data, and a small chart.
- Summary; this will display a summary of the data, including averages, ranges, alert results, LogTag identification data, and other information.

File Name

Whenever information is retrieved from a LogTag it is always automatically saved to disk. This entry determines the method to be used to create a meaningful name of the file that will contain the data downloaded from the LogTag.

The button at the end of the edit control () can be used to assist you with defining how file names are to be created by inserting the appropriate predefined element that matches the information you want to use. Clicking on this button will display a popup list, similar to the following picture to allow you select from the available elements.



To customize how the file name is created, you may use one or more of the available elements in any order. If you use spaces to separate the elements, these spaces will appear in the same location in the name of the file created. The letters must be in uppercase or lowercase as shown in the following table (for example, "%ID" not "%id") and all elements must be preceded by % if specified. Other characters that are included will appear in the same location and unchanged in the file name creation.

Element	Meaning
%DATE	The date when the LogTag information was originally retrieved.
%DATE-TIME	The date and time when the LogTag information was originally retrieved.
%FINISH	The date and time of the last reading recorded after being started. If the LogTag was not started then this information will be blank.
%FINISH-DATE	The date of the last reading recorded after being started. If the LogTag was not started then this information will be blank.
%FINISH-TIME	The time of the last reading recorded after being started. If the LogTag was not started then this information will be blank.
%FIRST	The date and time of when the LogTag began recording information, even if it was under pre-start conditions.
%FIRST-DATE	The date of when the LogTag began recording information, even if it was under pre-start conditions.
%FIRST-TIME	The time of when the LogTag began recording information, even if it was under pre-start conditions.
%ID	The unique LogTag identification value.
%LAST	The date and time of the last reading recorded, even if there are only pre-start recordings.
%LAST-DATE	The date of the last reading recorded, even if there are only pre-start recordings.
%LAST-TIME	The time of the last reading recorded, even if there are only pre-start recordings.


%PRODUCTID	The product identifier (part number) for the LogTag used to record the data.
%SERIALNUM	The unique serial number of the LogTag.
%START	The date and time the LogTag was started to record information. If the LogTag was not actually started and only pre-start information was recorded then this information will be blank.
%START-COUNT	The number of times the LogTag has been started since manufacture.
%START-DATE	The date the LogTag was started to record information. If the LogTag was not actually started and only pre-start information was recorded then this information will be blank.
%START-TIME	The time the LogTag was started to record information. If the LogTag was not actually started and only pre-start information was recorded then this information will be blank.
%TIME	The time when the LogTag information was originally retrieved.
%USERID	The user defined identifier for the set of information recorded by the LogTag.

You may use the \ character to specify that a file name definition includes a sub folder name as well as the actual file name, which is useful if you want to group/sort files automatically together, for example, by date or by User Id.

Each of the following elements within the quotes (") are not permitted, as they are not supported the operating system ": * ? < > |". If you do include one of these elements in the definition of how the file names are to be created they will be replaced with the _ character.


If you use a date and/or a time element, the format of that element will be determined by the settings defined in the "[Date and Time](#)" (see "Dates and Times" on page 118)" set of options.

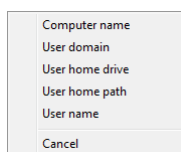
Folder Name

This determines the location where the files are automatically stored. The location defined here can specify a local drive path or a network drive path. UNC folder names are supported. The  button at the end of the edit control will assist you to locate the default store folder by browsing the folder structure available to you, if you choose to use it.

Since this is the default location where files are stored, this also represents the default folder that will be used when searching for files to open (through the Open command in the File menu).

You can also use the PC's environment variables to compose a user specific pathname. This is particularly of interest to network administrators who wish to create silent installations and create generic UserProfile.dat files to direct the data to a location on the local PC or a domain server.

You can insert these variables at any location in the path name, provided the final resulting name is a valid UNC folder name. Use the  button to insert following variables at the cursor:



Variable	Meaning
%COMPUTERNAME	The name of the computer as entered in the system description.
%USERDOMAIN	The domain name of the network the user is connected to.
%HOMEDRIVE	The drive letter on which the User 's documents directory is stored.
%HOMEPATH	The path (excluding the drive letter) of the user's home directory.
%USERNAME	The user' user name as required for logon.

A valid storage directory would be "%HOMEDRIVE%HOMEPATH\Documents\My LogTag Data".

Note: Some Network Attached Storage Devices (NAS Drives) use versions of SAMBA (Server Message Block) file servers which do not correctly report back whether a file exists or not. Consequently, LogTag Analyzer will overwrite without warning an already existing file with the same name, regardless of the settings made in the [Automation](#) (on page 101) options.

Uniqueness

This determines how the software will manage information retrieved from a LogTag when a file of the same name already exists. For example, when you retrieve the information from the same LogTag once every day, while the LogTag is still recording and the LogTag has not been prepared for its next use and started again. The options available include:

1 Always create a unique copy of files (recommended)

If a file of the same name already exists, then the software will automatically append "Copy *n*" to the end of the file name, where "*n*" will be a unique number.

2 Overwrite file if the file already exists

If a file of the same name already exists, the existing file is overwritten (deleted and replaced) with a file that contains the information just retrieved from a LogTag.

3 Prompt if an existing file already exists.

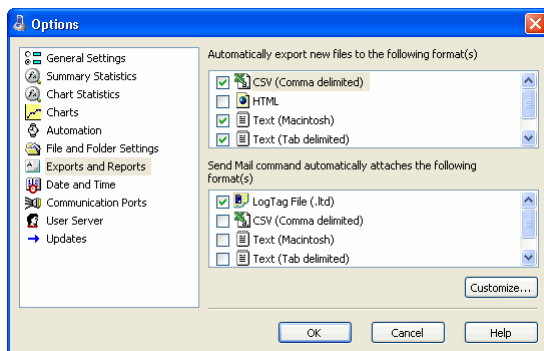
If a file of the same name already exists, then you will see a message appear asking you whether or not you want to overwrite and replace the existing file with the information just retrieved from the LogTag.

If you answer "Yes" then the action described in the option "Overwrite file if the file already exists", previously explained, will be performed.

If you answer "No" then the action described in the option "Always create a unique copy of files (recommended)", previously explained, will be performed.

Exports and Reports

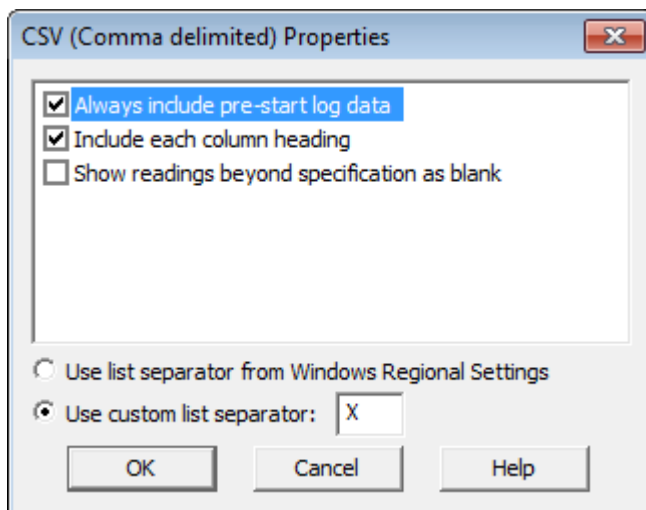
Every time recorded data is retrieved from a LogTag it is automatically saved to disk in the software's native format so that it can be opened and viewed at a later date. However, it may be that the recorded data is to be regularly integrated with other data and/or view the recorded data using software other than LogTag Analyzer. Exports and Reports will instruct the software to automatically create one or more files in a format that is compatible with the other software being used, whenever recorded data is retrieved from a LogTag.



To instruct the software to create a copy of the file in a format other than the native format used by LogTag Analyzer, simply tick the file format from the list available.

- ☐ Text (Tab delimited)
- ☐ Text (Macintosh)
- ☐ CSV (Comma delimited)
- ☐ HTML
- ☐ PDF (Portable Document Format)

To override and customize the contents of the particular file format, simply ensure the file format is highlighted and click **Customize...**. Once **Customize...** has been clicked, a window will be displayed that will show the available options that can be overridden.



The options for the PDF files are more extensive than for other files, please see [PDF files](#) on page 56.

All the additional files created will be automatically saved at the appropriate time using the file name and folder location defined in the "[File and folder settings](#) (on page 113)" options. Since these file formats are not the native LogTag Analyzer file format, the LogTag Analyzer software will no longer be able to detect whether or not the data within it is genuine and original and will not be able to display the information within the file.

Note: CSV files by definition use a comma as a separator between individual values of a row. You can now select if LogTag Analyzer should use the list separator from the "Regional and Language Options" in the Windows Operating System (which typically is a comma), or a self selected separator instead to create CSV files. In some languages, however, this separator may be a different character such as a semicolon or a colon. Although for those languages the resulting file is strictly speaking no longer a CSV file, it maintains compatibility with the import of CSV files into MS Excel.

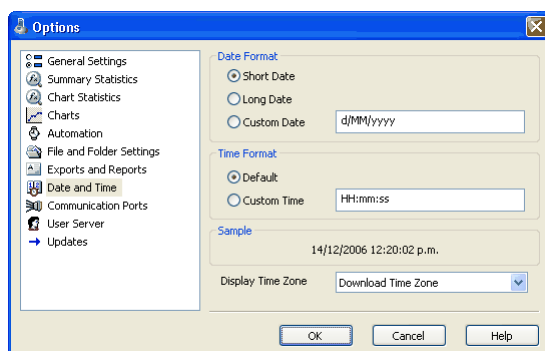
To select file formats for the e-mail attachment created through the Send Mail command when [Sending a file by e-mail direct from Analyzer](#) on page 88, tick the desired file formats in the second list.

Note: The list of Send Mail file formats contains only file formats selected in the Export formats list, plus the LogTag Analyzer format.

Please also be aware any formats selected here will neither be automatically uploaded to an FTP site, nor e-mailed through the automatic e-mailing function. Files to be automatically sent or uploaded are enabled in the [Basic FTP settings](#) on page 109 and the [Basic SMTP and e-mail settings](#) on page 104 dialogues. Customisation, however, is only performed in this section about Exports and Reports.

Dates and Times

The Date and Time options allow how the date and time information is displayed by the software to be overridden. It does not affect how the date and time information is stored and therefore, how the date and/or time information is shown can be changed at any time. At the bottom of this option window, a sample of the date and time using the formats selected will be displayed.



To customize how the date information is displayed, the following elements may be used. If spaces are used to separate the elements, these spaces will appear in the same location in the date displayed. The letters must be in uppercase or lowercase as shown in the following table (for example, "MM" not "mm"). Characters that are enclosed in single quotation marks will appear in the same location and unchanged in the date displayed.

Element	Meaning
d	Day of month as digits with no leading zero for single-digit days.
dd	Day of month as digits with leading zero for single-digit days.
ddd	Day of week as a three-letter abbreviation.
dddd	Day of week as its full name.
M	Month as digits with no leading zero for single-digit months.
MM	Month as digits with leading zero for single-digit months.
MMM	Month as a three-letter abbreviation.
MMMM	Month as its full name.
y	Year as last two digits, but with no leading zero for years less than 10.
yy	Year as last two digits, but with leading zero for years less than 10.
yyyy	Year represented by full four digits.

To customize how the time information is displayed, the following elements may be used. If spaces are used to separate the elements, these spaces will appear in the same location in the time displayed. The letters must be in uppercase or lowercase as shown in the following table (for example, "ss", not "SS"). Characters that are enclosed in single quotation marks will appear in the same location and unchanged in the time displayed.

Element	Meaning
h	Hours with no leading zero for single-digit hours; 12-hour clock.
hh	Hours with leading zero for single-digit hours; 12-hour clock.
H	Hours with no leading zero for single-digit hours; 24-hour clock.
HH	Hours with leading zero for single-digit hours; 24-hour clock.
m	Minutes with no leading zero for single-digit minutes.
mm	Minutes with leading zero for single-digit minutes.
s	Seconds with no leading zero for single-digit seconds.
ss	Seconds with leading zero for single-digit seconds.
t	One character time-marker string, such as A or P.
tt	Multi character time-marker string, such as AM or PM.

For example, if the date was 2 January 2004 and the date format was defined as "yy-M', ' dd" (excluding the double quotes) the date would be displayed as "04-1, 02".

Time zones

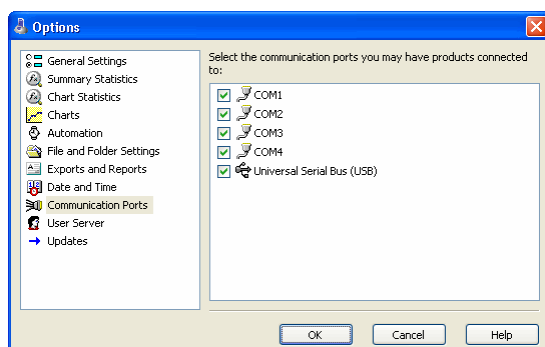
The time zone of the computer used to configure a LogTag is stored in the LogTag's memory. In some cases, the configuration time zone will be different from the time zone at the download location. This allows you to select which time zone will be used to display dates and times within the chart, summary and data displays. This option will not have any effect on the original recorded data.

Download Time Zone	All reading times are displayed in the time zone of the computer used for downloading/displaying the data. This is the default setting.
Configuration Time Zone	All reading times are displayed in the time zone of the computer used for configuring the LogTag.
UTC/GMT Time Zone	All times are displayed in Universal Time Coordinates, or Greenwich Mean Time representation.
Display Clock / Configuration Time Zone	All times are displayed relative to the clock that is showing on the display. If the unit has no display, the logger's Configuration time zone is used.

Communication Ports

The Communication Ports options control which communication ports are checked for connected Interface Cradles. This allows certain communication ports to be excluded, which are not used to connect Interface Cradles to and/or are regularly used for other applications, thereby reducing the possibility that this software will interfere with the operation of other applications running on the current system.

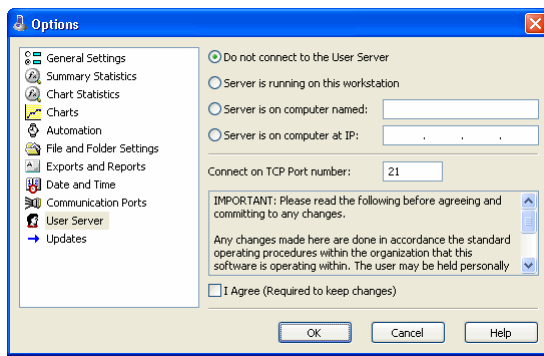
The software checks each communication port at the same time, rather than one after the other, therefore having the software check multiple communication ports will not adversely affect the performance of the software significantly. As the software supports multiple communication ports, it is possible to connect and use to more than one Interface Cradle at the same time.



Note: USB ports cannot be disabled; if you do not wish the software to communicate with USB ports you must unplug any interface currently connected.

User Server

The User Server options define if and where the software should connect to the LogTag User Server software. If you do not have LogTag User Server software installed on your computer and/or available on your local area network, you will not need to make any changes to this set of options. Connection to the LogTag User Server software is typically only used within a multiple computer user environment and/or if your organization requires compliance with the US FDA 21 CFR Part 11 regulations, for use of digital signatures that are controlled by a central administrator.



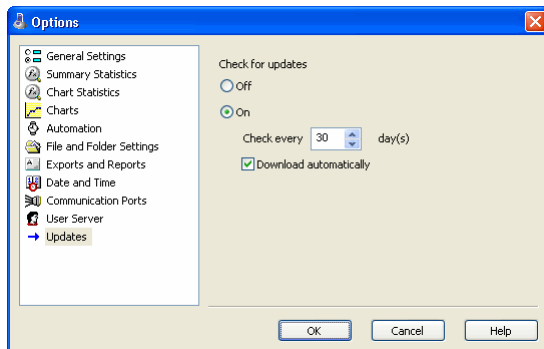
You will need to consult your network administrator and/or documentation pertaining to the LogTag User Server software to determine what settings should be used in this set of options. You will not be able to change these settings if the software is unable to establish a valid connection with the LogTag User Server software.

Once a valid connection to the LogTag User Server software has been established, you will be required to [log on](#) (see "How users log on" on page 141)" to the software to continue using it.

Software Updates

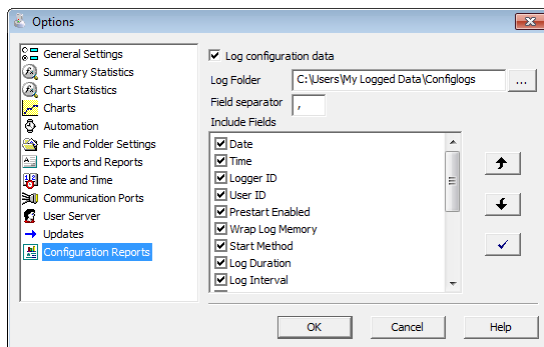
The LogTag Analyzer software can periodically check to determine if a newer version of the program is available for download from the LogTag Recorders website. This section allows the time interval, if enabled, between each check for a newer version to be defined. An interval of 30 days is recommended.

If the "Automatic Update" setting is enabled, LogTag Analyzer will check and download a newer program version without further notification.



Configuration Reports

It can sometimes be useful to keep a record of the configuration data of a LogTag Recorder. LogTag Analyzer allows a number of selected configuration data to be stored in a text file. These settings are made in the Configuration Reports window.



When the "Log configuration data" option is ticked, the selected parameters are written into a text file, which is named "LogTag Analyzer_config_log_WW-YYYY", where WW is the current week number and YYYY is the current year. Each week a new file will be generated.

Clicking on the button will allow you to select a folder of your choice where the log files will be stored. For each logger configured a new line is started in the text file, individual entries in each line are separated by the character specified in the "Field separator" box. You can change the order of the entries in each line by selecting a Field and clicking on the up or down buttons. Clicking the tick box enables all parameters to be included in the log file.

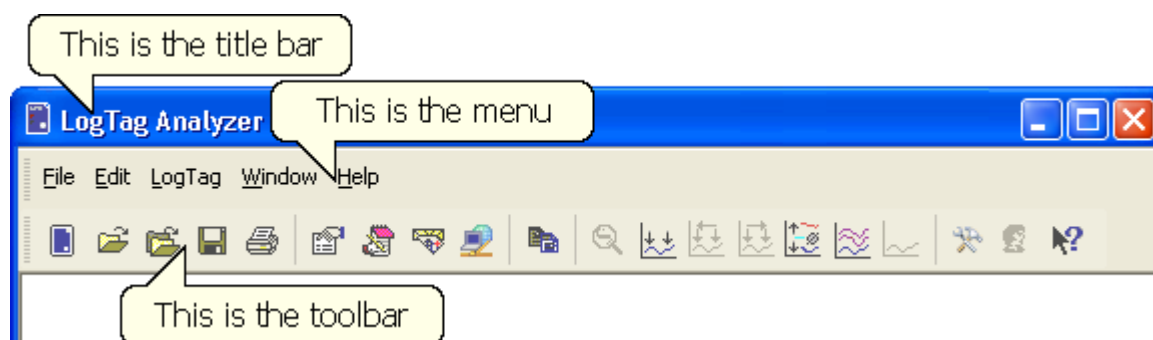
Following parameters can be selected:

- ☒ Date
- ☒ Time
- ☒ Logger ID
- ☒ User ID
- ☒ Prestart Enabled
- ☒ Wrap Log Memory
- ☒ Start Method
- ☒ Log Duration
- ☒ Log Interval
- ☒ Log Count
- ☒ Lower Alert(s)
- ☒ Upper Alert(s)
- ☒ Consecutive Alert
- ☒ Non Consecutive Alert
- ☒ Latch Alert
- ☒ Clear Alert
- ☒ Configure Requires Password
- ☒ Download Requires Password

CHAPTER 7

Menus and Toolbars

At the top of the screen for the LogTag Analyzer, just below the title bar, which contains the name of the software, is the menu system and toolbar for the software. The toolbar provides quick access to some of the more commonly used functions within the menu system. The menu system contains lists of all the operations and commands that are available to you while using the software.



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Standard Window commands	134

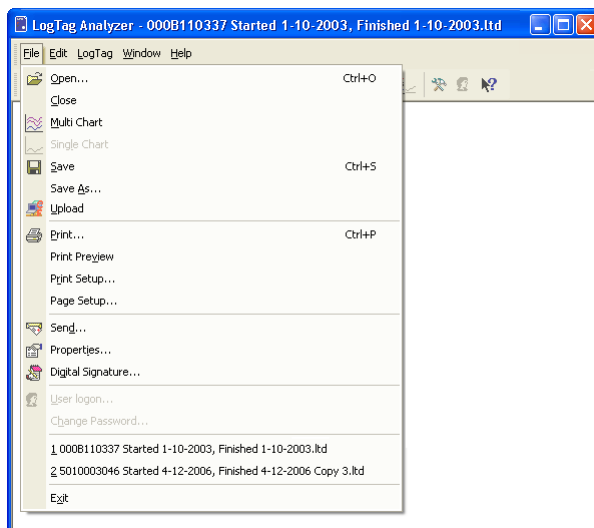
Menu commands

The menu system has been separated into groups of related commands. Each of these menu groups is explained in more depth in the subsequent sections. The software will only display the menu groups and commands within each menu group that are appropriate depending on what you are currently doing with the software.










You may also see that some of the menu commands have a reference after the command name, for example F2 or Ctrl+O. These represent key strokes on the keyboard that instruct the software to perform the appropriate command, without the need to select the menu or toolbar command. When only one key reference is mentioned, for example "F2", then pressing that single key on the keyboard will cause the appropriate command to be performed. If there is more than one key reference mentioned, for example Ctrl+O, then to cause the command to be performed you must press and hold down the first key mentioned while pressing the other key once. When letters are used in the key reference, for example Ctrl+O, it does not matter whether or not the caps lock is on or off.




File Menu

The "File" menu contains commands that generally relate to a LogTag file as a whole. A LogTag file contains a variety of information that relates to a data set representing readings that were recorded over a discrete period of time by a single LogTag. The File menu will appear similar to the following picture.



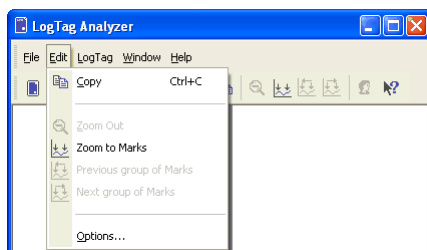
The following table outlines the commands and the explanation of each command that may appear in the "File" menu when using the LogTag Analyzer software:

Command	Explanation
Open (see "Calling up previous results" on page 89)... 	<p>This will display the Open file dialog, which will allow you to open:</p> <ul style="list-style-type: none"> LogTag files that contain readings previously retrieved, or previously saved Multi Chart configuration files. <p>It will start at the folder defined in the File and Folder Settings (on page 113) section in the Options (see "Customising the software" on page 96).</p> <p>If a Multi Chart file is selected, the LogTag Analyzer software will automatically switch to Multi Chart mode and all the selected files will be added to the Multi Chart display.</p>
Close	This command will close all windows that are displaying information about the open file that is currently selected. If no files are currently open this command will not be visible.
Multi Chart 	This will change the way recordings are displayed such that they are all combined on a single chart window (see Combining Charts into a single chart on page 76).
Single Chart 	This will change the way recordings are displayed such that each which will contain all the information retrieved from a single LogTag.
Save 	This will save any changes you have made to the LogTag file (or Multi Chart configuration) to your disk drive.
Save As...	This will display the Save As file dialog, which will allow you to save a copy of the file currently being displayed in the same or different folder with the same or different file name.
Upload 	This will send an e-mail with the currently active file attached to a list of recipients or upload the file to a pre-determined FTP site. See Automatic e-mailing and uploading to FTP sites on page 102.
Print (see "Printing the results" on page 87)... 	This will open a window allowing you to print a copy of the LogTag file to an output device, which will typically be a printer. This command is further explained in the section " Printing the results (on page 87)".
Print Preview (see "Print preview toolbar" on page 133)	This will change the display mode of the software to show you a copy of how a printout of the currently selected file and window would look like. In "Print Preview" mode you will not be able to zoom in or out of a chart. Click  to exit the "Print Preview" mode and return to normal display mode.
Print Setup...	This will open a window allowing you to view and/or adjust one or more of your printer's settings.
Page Setup...	This will open a window allowing you to view and/or adjust one or more of your page settings, like printer margins and page orientation.
Send on page 88... 	This will help you send, by e-mail, the currently open and selected LogTag file to another user without the need to exit to your e-mail software or to deal with file attachments. This command is explained in further detail in the section " Sending a file by e-mail direct from Analyzer on page 88".
Properties (see "Viewing file properties" on page 94)... 	This will open a window that will display the information about the file that is being displayed and currently selected. This same window and information will be displayed if you view the properties of the file from Microsoft Windows Explorer.

Digital Signature (see "Digital signatures" on page 90)... 	This will open a window to display a list of digital signatures that have been included with the file. It also allows you to add and print this list of digital signatures. This command is explained in further detail in the section " Digital signatures (on page 90)".
User logon (see "How users log on" on page 141)... 	This allows a user to logon to and use the Analyzer software. When the software is connected to the User Server software, users must logon to the software prior to being permitted to use the software. Therefore, this command will only be available if the Analyzer software is connected to the User Server software. If a user is already logged on to the software, then this command is not visible. The section " User Server (on page 121)" explains in more detail how to get the Analyzer software to connect to the User Server software.
Logoff user (<i>username</i>) (see "How users log on" on page 141) 	This allows the currently logged on user to logoff the Analyzer software. The <i>username</i> portion of this command will represent the name of the user currently logged on. If there is no currently logged on user, this command is not visible.
Change Password (see "How users change their password" on page 142)...	This allows the currently logged on user to modify their password that they use to logon to the Analyzer software. This command will only be available if the Analyzer software is connected to the User Server software and the User Server administrator has granted the appropriate user permissions.
1, 2, 3, etc	This portion of the menu represents a list of the most recently files you have viewed. To reopen one of these files, simply click on the entry (name of the file) to open. If a file that you want to view is not included in this list, you may use the "Open..." command included in this menu. The number of files included in this list can be adjusted through the " General Settings (on page 98)" section of the Options (see "Customising the software" on page 96).
Exit	This command will exit and close down the LogTag Analyzer software. Any files that you currently have open will also be closed automatically for you. If a user is currently logged on to the Analyzer software when the Analyzer closes, the user will be automatically logged off.

Edit Menu

The "Edit" menu contains commands that generally relate to the contents of a LogTag file and will appear similar to the following picture.



The following table outlines the commands and the explanation of each command that may appear in the "Edit" menu when using the LogTag Analyzer software:

Command	Explanation
Copy (📄)	Places a copy of the contents of the currently displayed window onto the clipboard, which can then be pasted into any Windows® application. If you are copying a chart, the chart at its current zoom range is copied to the clipboard. If you are copying from one of the tabular style windows (Data or Summary), then the entire contents of the window is copied to the clipboard, regardless of what part of the data you have scrolled to view.
Zoom Out (🔍)	This will undo the last zoom operation performed allowing you to see more of the data on the chart. If the chart is displaying all the readings recorded by the LogTag, this command will not be available.
Zoom to Marks (📏)	When this command is enabled, the chart is automatically zoomed to show readings recorded between inspection marks. The section "Starting and using the LogTag" (on page 22) explains in further detail how inspection marks are recorded.
Previous group of Marks (📏)	This command will show the readings recorded between the first inspection mark shown and the previous inspection mark recorded. This command will only be available if the "Zoom to Marks" command is enabled and the first reading recorded is not currently visible.
Next group of Marks (📏)	This command will show the readings recorded between the last inspection mark shown and the next inspection mark recorded. This command will only be available if the "Zoom to Marks" command is enabled and the last reading recorded is not currently visible.
Options (see "Customising the software" on page 96)... (⚙️)	This will open a window allowing you to customize the software. This command is further explained in the chapter "Customizing the software" (see "Customising the software" on page 96)".

LogTag Menu

The "LogTag" menu contains commands that generally relate to the usage and interaction with LogTags.

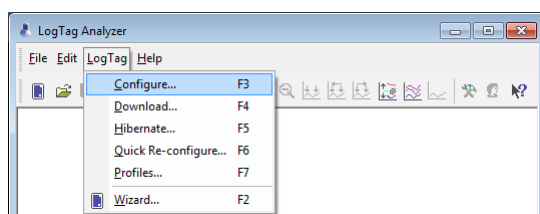



Figure 26: Menu bar - LogTag Menu

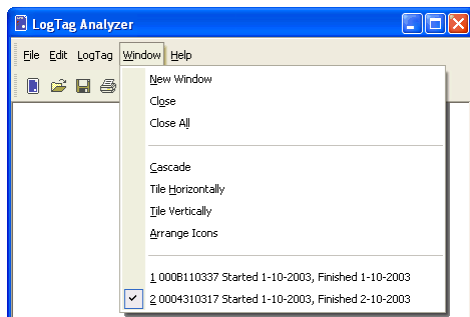
The following table outlines the commands and the explanation of each command that may appear in the "LogTag" menu when using the LogTag Analyzer software:

Command	Explanation
Configure (see "Getting a LogTag ready for use" on page 26)...	This will display a wizard to help you through the necessary steps to prepare LogTags for their next use. This command is explained in further detail in the chapter "Preparing LogTags for use" on page 25".

Download (see "Getting results from LogTag" on page 52)...	This will display a wizard to help you through the necessary steps to retrieve a copy of the recorded readings stored within the LogTag(s). This command is explained in further detail in the chapter " Results from LogTag (on page 51)".
Hibernate... (see "Hibernation - Prolonging battery life" on page 48)	This will display a wizard to help you through the necessary steps to set LogTags to "Hibernation" mode. This command is explained further in the chapter " Prolonging battery life (see "Hibernation - Prolonging battery life" on page 48)"
Wizard (see "Get a LogTag ready for use" on page 18)... 	This will display a wizard to help you through the necessary steps to retrieve a copy of the recorded readings stored within the LogTag(s) and then prepare the LogTags for their next use. This command is explained in further detail in the chapter " Quick Start Guide (on page 15)".

Window Menu

The "Window" menu contains commands that relate to the management of each Window open within the LogTag Analyzer software that displays the contents of a LogTag file.



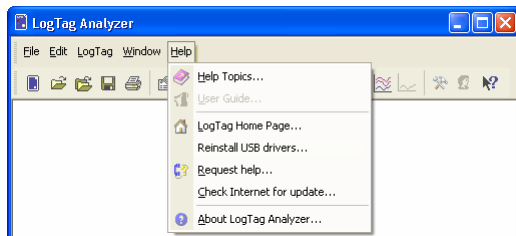
The following table outlines the commands and the explanation of each command that may appear in the "Window" menu when using the LogTag Analyzer software:

Command	Explanation
New Window	Opens a new window that contains a copy of the information of the currently selected window. This command is useful when you need to closely inspect and analyze different sections of the same data set.
Close	Closes the currently selected window within the LogTag Analyzer software.
Close All	Closes all the windows within the LogTag Analyzer software.
Cascade	Arrange all the windows within the LogTag Analyzer software in an overlapping style.
Title Horizontally	Arrange all the windows within the LogTag Analyzer software as horizontal non-overlapping tiles.
Title Vertically	Arrange all the windows within the LogTag Analyzer software as vertical non-overlapping tiles.
Arrange Icons	Arrange all the minimized windows within the LogTag Analyzer software at the bottom of the main window.






1, 2, 3, etc	The tick mark beside these entries indicates the window that is currently selected. If you want to change the currently selected window to one of the windows listed, just click/select the appropriate entry on this list.
--------------	---

Help Menu

The "Help" menu contains commands that relate to providing you with help and assistance with using the LogTag Analyzer software.













The following table outlines the commands and the explanation of each command that may appear in the "Help" menu when using the LogTag Analyzer software:

Command	Explanation
Help Topics ()	Opens a window that contains the online help.
User Guide ()	Opens the online user guide for viewing. Requires Adobe Acrobat and/or Adobe Acrobat Reader software, version 4 or later, to be installed on the computer.
LogTag® Home Page... ()	This will open your default Internet browser software and display the LogTag Recorders Internet site, www.logtagrecorders.com . This command requires that your computer be currently connected to the Internet to successfully display the LogTag Recorders Internet site.
Request help (see "Getting more help" on page 144)... ()	This will gather non personal information from your system to include in the e-mail to be sent to software support at LogTag Recorders, so that the support team will be informed of the relevant information about your system in order to provide you with quality and useful assistance. This command is explained in further detail in the chapter Getting more help (on page 144).
Check Internet for update...	This is a simple way of checking to see if there is a newer version of this software available for download. This command is explained in further detail in the chapter about Upgrading Analyzer on page 12.
About LogTag Analyzer (see "Finding your software version" on page 143)... ()	Display the version information about the LogTag Analyzer software that you are using.

Toolbar commands

Each icon on the toolbar represents a unique command.



- 
Access LogTag
 This will bring up the LogTag Wizard, which will take you through the steps to retrieve readings from connected LogTag(s) and prepare them for their next use.
- 
Open
 This will display the file open window to allow you to locate and open LogTag files that contain previously retrieved LogTag readings.
- 
Save
 Save a copy of the LogTag data to a file on your disk drive.
- 
Print
 Opens the window that will allow you to print a copy of the LogTag data to a printer.
- 
File properties
 Displays file properties about the currently selected open file.
- 
File digital signatures
 Displays information about any digital signatures included in the currently selected open file, which is also allows where new digital signatures can be added to the file and where you can print a copy of the digital signatures.
- 
Send mail
 Creates a new blank e-mail for sending a copy of the currently selected open file as an attachment to a recipient of your choice.
- 
Upload
 Uploads the file in the currently active window to an FTP server, or sends it by e-mail. Please see [Automatic e-mailing and uploading to FTP sites](#) on page 102.
- 
Copy
 Places a copy of the currently displayed information to the Windows clipboard so that you can paste it into another Windows software package.
- 
Zoom out
 Zooms out one level of the chart in the currently active window. If you are displaying a chart and this function is not available, then all available data are already being displayed and you cannot zoom out any further.

**Zoom to inspection marks**

This zooms the chart so readings are shown between the oldest reading recorded and the first inspection mark that exists in the data. If this function is not available then there are no inspection marks in the data currently being displayed.

The next two commands will not be available until this command is activated.

**Previous inspection mark group**

This zooms the chart so readings are shown which were recorded between the first inspection mark currently being displayed and the previous inspection mark.

This function is disabled when either the oldest reading is already being displayed, or the "Zoom to inspection marks" function has not been activated.

**Next inspection mark group**

This zooms the chart so readings are shown which were recorded between the last inspection mark currently being displayed and the next inspection mark.

This function is disabled when either the newest reading is already being displayed, or the "Zoom to inspection marks" function has not been activated.

**Average**

Combines all open file windows into a single Multi Chart window and activates the average tab. , or if already in multichart, activates or disables the average tabs. It is recommended to deactivate this feature when processing large data sets, as [Minimum, Maximum and Average Charts](#) (see "Special Chart Tabs" on page 79) can require considerable memory and processor resources when activated.

**Multi Chart**

Switches into Multi Chart mode, which displays all currently open charts together in one window. If additional LogTag(s) are downloaded or more files opened, their data will be added to the Multi Chart window.

**Single Chart**

Switches into Single Chart mode. Each chart that is currently open will be displayed in its own window.

**Options**

This will open a window allowing you to customize the software. This command is further explained in the chapter "[Customizing the software](#) (see "Customising the software" on page 96)".

**Logon/Logoff user**

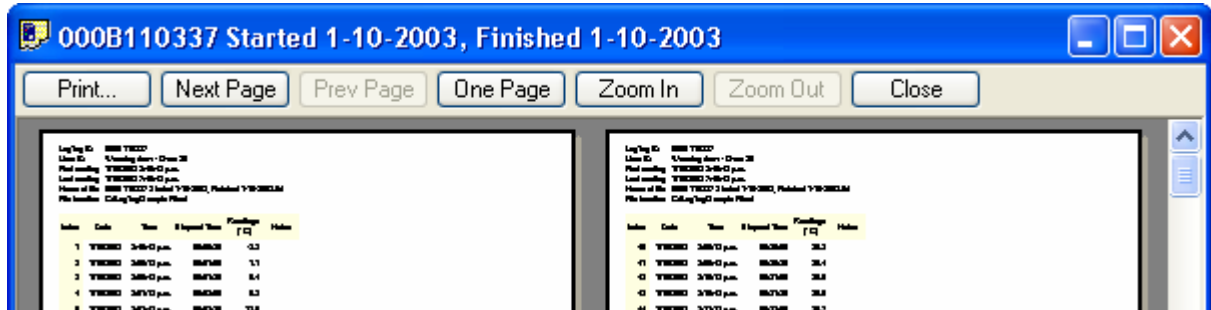
This will log a user on to the software if no user is currently logged on or log off the currently logged on user. This command will only be available if the software is connected to the LogTag User Server software.

**Help**

Click on this icon, then click on an area on the screen, and the help topic for this area will be displayed.

Print preview toolbar

The print preview feature, available through the [File menu](#) (on page 125), of the software will display copy of the data as it would be included on a print out. When the software is displaying a file in print preview mode, an additional toolbar will appear, similar to the following picture:



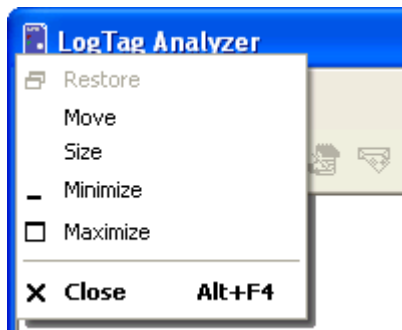
Command	Explanation
Print (see "Printing the results" on page 87)...	This will open a window allowing you to print a copy of the LogTag file to an output device, which will typically be a printer. This command is further explained in the section " Printing the results (on page 87)".
Next Page	This will display the next page included in the print out. This button will be disabled if there are no more pages available to be displayed.
Prev Page	This will display the previous page included in the print out. This button will be disabled if there are no previous pages available to be displayed.
One Page	Selecting this button will change the display so that only one page is displayed at a time. Once this button is selected it will change to "Two Page".
Two Page	Selecting this button will change the display so that two consecutive pages are displayed side by side at the same time. This button will be disabled if there is only one page in the print out, like a chart. Once this button is selected it will change to "One Page".
Zoom In	This will zoom in the display of the print out making it appear larger on the screen. It will not effect what information is included in the print out.
Zoom Out	This will zoom out the display of the print out making it appear smaller on the screen. It will not effect what information is included in the print out.
Close	This will close the print preview mode of display and revert the display of the data back to normal mode, which will allow users to switch between chart display and data listing display, for example.

Standard Window commands

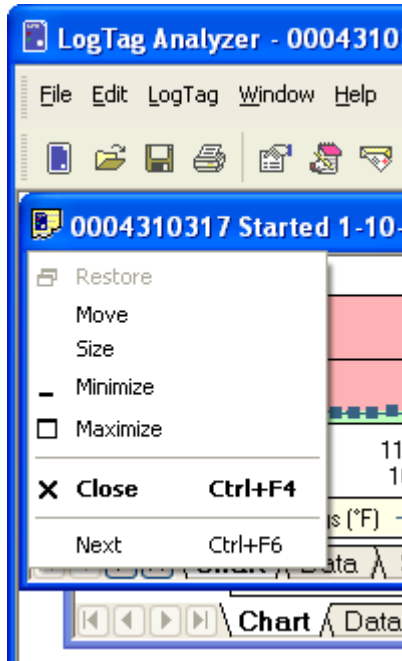
In the top right corner of each window, one or all of the buttons in the following image will be displayed and will (from left to right) minimize the window, maximize the window or close the window.



The following picture illustrates an example of the menu that will appear if a user selects the icon in the top left corner of the LogTag Analyzer software, usually by clicking the left mouse button on it, or by clicking the right mouse button on the [title bar](#) (see "Menus and Toolbars" on page 124). The commands illustrated in the following picture allow you to change the location and/or size of the window containing the LogTag Analyzer software. Users can also move the window containing the LogTag Analyzer software by "dragging" the title bar, which is typically performed by pressing and holding the left mouse button down over the title bar of the software and moving the mouse to the new location for the window.



The following picture illustrates an example of the menu that will appear if a user selects the icon in the top left corner of a data file window, usually by clicking the left mouse button on it, or by clicking the right mouse button on the [title bar](#) (see "Menus and Toolbars" on page 124) of the data window. These menu commands will only effect the window containing the data retrieved from a LogTag rather than the Window that contains the entire LogTag Analyzer software.



CHAPTER 8

Working with Networks

When using and deploying software in a network environment, network administrators often require additional technical information about the software so they can integrate support for it correctly and seamlessly. This chapter briefly covers some points of interest for computer network administrators.

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Distributing software to workstations

When using the software on many computers within a computer network, it is not always efficient to visit and install the software and subsequent updates manually on each computer workstation. The installation of the software does support zero administration installation, whereby the installation package can be located on a central point, usually a server, and have it install on each relevant workstation, without requiring user intervention.

To distribute the software without user intervention is a two step process.

- 1 Create an installation script file that will provide the answers and actions to be performed on each step of the installation process. To create an installation script, use the following command line syntax, including the quotes as used:

```
\\myserver\my_apps_path\setup.exe /a /r /f1"\\myserver\my_apps_path\setup.iss"
```

- 2 Ensure that whenever a user installs the software the installation script is used. To install the software using an installation script previously created use the following command line:

```
\\myserver\my_apps_path\setup.exe /a /s /f1"\\myserver\my_apps_path\setup.iss"
```

Where,

- a "\\myserver\my_apps_path\" represents the network path to the folder containing the installation of the LogTag Analyzer software.
- b "setup.exe" is the installation software.

As many different installation scripts as are suitable for your situation may be defined and used.

LogTag Analyzer software is released on the LogTag Recorders Internet site using a standard filename syntax, which is [software_name][major_version][minor_version]r[release_version].exe. For example, if the file name of the installation package was "logtag_analyzer10r24.exe" the name of the software would be "LogTag Analyzer" version 1.0 Release 24.

The installation of the LogTag Analyzer software involves copying a number of files to the destination folder, which can be chosen during the installation process, a file is installed in the Windows System folder and some plug and play drivers to support the USB Interface Cradle. Therefore, when deploying the software onto Windows NT® based operating systems like Windows NT® and Windows XP®, the user installing the software will require local administrator privileges for the software to install correctly. It is possible, to elevate a users permissions on a Windows NT® based server network for the sole purpose of being able to install the software successfully through the use of a Group Policy Object.

When installing the software on to a Windows NT® operating system, the plug and play drivers for the USB Interface Cradle will not be installed as Windows NT® does not support USB devices.

Note: More detailed instructions for network administrators are available. Please send an e-mail to software@logtagrecorders.com for further information.

Simple Distribution of FTP/SMTP settings

Some users may not be familiar with entering the correct parameters for automated FTP uploads and automatic SMTP mailer settings, in some instances it may even be advisable a Network Administrator prevent the changing of these settings by standard users.

For those situations Network Administrators can create a file containing FTP upload and SMTP mailer settings for individual users, which will be imported automatically into LogTag Analyzer on start-up and replace the settings already present in the Options for Automation.

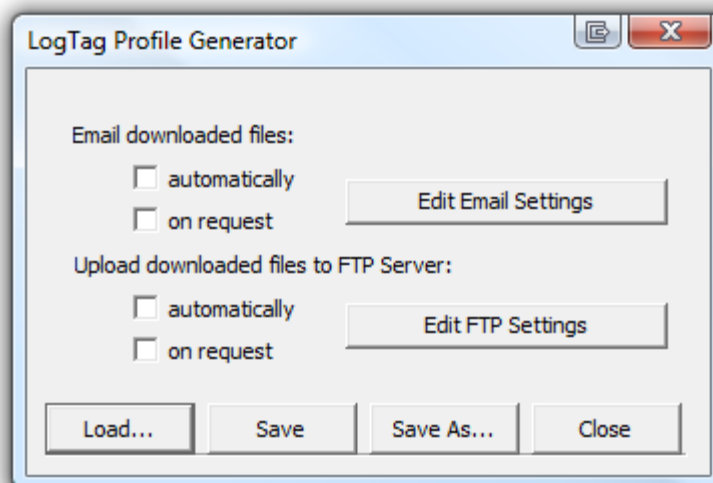
Creating such settings files requires a tool called LogTag[®] Settings Editor, which is available through LogTag Recorders directly or through your distributor.

Up until now two different versions of LogTag Analyzer were offered; the ANSI version for languages which do not require special characters, and a Unicode version, offering special characters required for languages such as Chinese or Greek. Differences in those versions also required two versions of the LogTag[®] Settings Editor.

Starting with LogTag Analyzer version 2.2 an ANSI version of the software will no longer be offered for download. Instead, the Unicode version will become the only version to be distributed. When upgrading to LogTag Analyzer version 2.2 the settings already entered in the software will be inherited. If you decide to import new settings after the update, you must use the LogTag[®] Settings Editor version 1.2 or later to create the settings file. You can load an existing UploadSettings.dat file as a starting point, no matter with which version was used to create it.

Starting the LogTag[®] Settings Editor displays a simple interface offering the same controls as they are present in the Option - Automation window for the FTP upload and SMTP mailer settings, with additional controls to save and load settings files.

Network Administrators are expected to be familiar with the parameters required for these settings, for a description of each entry see [Automatic Uploading to FTP sites and automatic e-mailing](#) on page 102 from the Options settings.



At any stage the settings entered can be saved into a file, and previously created files can be loaded again and changed or saved with a different file name.

To make use of the automated transfer settings the file must be named "UploadSettingsU.dat". On start-up LogTag Analyzer will look for this file in the same directory as the "UserProfile.dat" file (which holds the settings for an individual installation of LogTag Analyzer). You can find this file in C:\Users\#USER#\AppData\Roaming\LogTag® for Windows™ Vista or C:\Documents and Settings\#USER#\Application Data\LogTag® for earlier Windows™ versions.

If the file is found, the settings will be imported into the Options - Automation entries and also saved in the "UserProfile.dat" file. Upon successful transfer the "UploadSettingsU.dat" file will be renamed to UploadSettingsU_imported.dat and no longer be read during any subsequent start-up of LogTag Analyzer. All fields including the empty ones will be transferred, not only the filled fields.

A user can still change the FTP upload and SMTP mailer settings even after transfer from the "UploadSettingsU.dat" file. If this is not desirable, LogTag Analyzer must be used together with LogTag® User Server, where user can be blocked from accessing certain options. Should it be necessary to transfer the settings again, or transfer new settings, the existing file can be renamed to "UploadSettingsU.dat", or a new "UploadSettingsU.dat" file can be copied into the folder. The transfer process will then be executed again when LogTag Analyzer next starts.

Note: LogTag Analyzer will import the "UploadSettingsU.dat" file if located in the correct directory, even if LogTag® User Server has specifically prohibited editing the Automation Options. In this case, if an incorrect setting is imported, the only way to remove this setting is by importing a different "UploadSettingsU.dat" file with different parameters, or to change the user's permission settings to include the ability to edit the Automation settings in the Options.

Restricting what users can do

In a multiple user environment, it is not always desirable to allow every user to perform any and all tasks with the software. For example, to ensure all documents printed from the software use the same date/time display format, it may be desirable to not allow users to customize the software to change how the software displays dates and times. To provide administrators of systems with a central point of control, LogTag Recorders has developed a software package called "LogTag User Server", which when used in conjunction with this software, it will provide an administrator with the ability to choose whether or not to restrict what users can and cannot do with this software.

To find out more about LogTag User Server, please contact your network administrator and/or your LogTag reseller.

Disabling Updates

It is sometimes desirable for network administrators to disable the ability to update the LogTag Analyzer software, particularly if the use of LogTag® products is governed by Standard Operating Procedures, which require a certain version of LogTag Analyzer to be installed.

Starting with version 2.2, access to the automatic update can be disabled through a registry setting.

Note: This technique is directed towards experienced network professionals who are familiar with the procedures required. It involves editing the registry. If you do not have experience with network administration or editing the registry do not attempt this procedure., as it can render your computer non-functional. Please also consult the help function of your operating system to learn about the consequences of editing the registry.

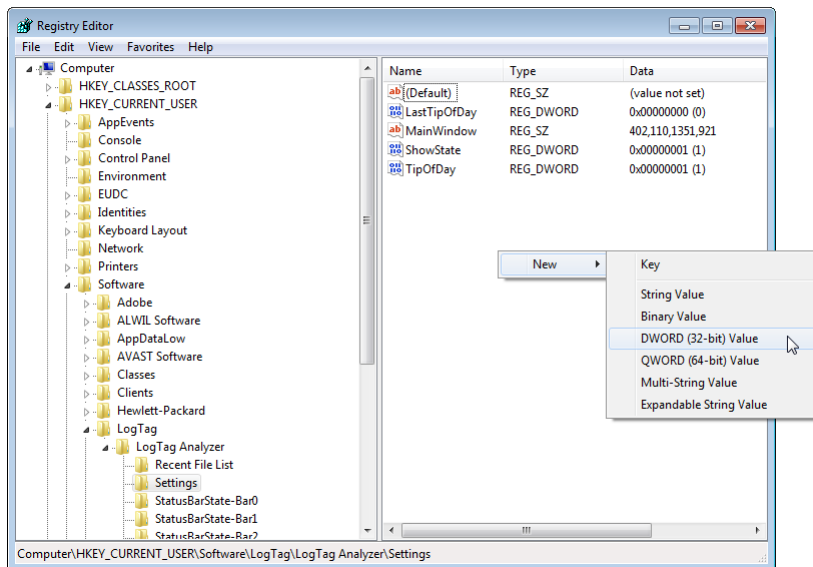


Figure 27: Editing the registry to prevent users from checking for updates

Open the registry and browse to the following key:

`HKEY_CURRENT_USER\Software\LogTag®\LogTag Analyzer\Settings`

Add a DWORD and name it "DisableSoftwareUpdate". Setting its value to any value other than 0 will disable the automatic update function regardless of the settings made in [Options - Updates](#) (see "Software Updates" on page 121) and also prevents the user from accessing the update function manually.

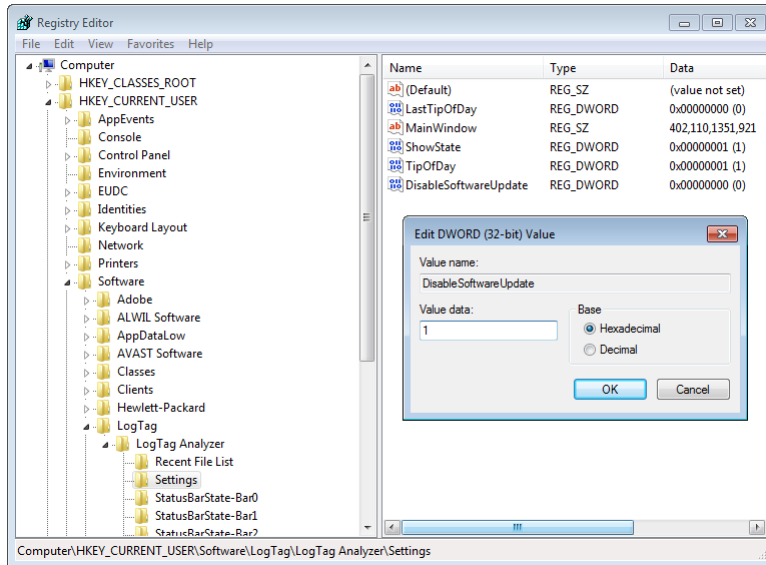
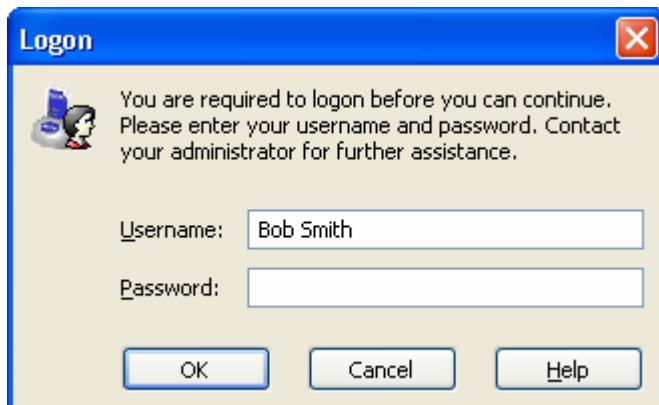


Figure 28: Adding and editing the DWORD

This registry setting can be distributed via GPO to client workstations. This method is preferred over IP address blocking as it will still allow users to take advantage of the support they can get from the website at www.logtagrecorders.com.

How users log on

When the software has been [customized](#) (see "Customising the software" on page 96) to be connected to the [LogTag User Server](#) (see "User Server" on page 121) software, all users are required to successfully logon to the software before being permitted to use any of the features and functionality of the software. For a user to successfully logon to the software, the user must enter their username, which the administrator would have assigned, and their password. Username's are typically not case sensitive, however passwords are. That is, entering the Username "Bob Smith" is the same as entering "BOB SMITH" and "bob smith". However, entering a password of "bob" rather than "Bob", for example, is considered to be different.

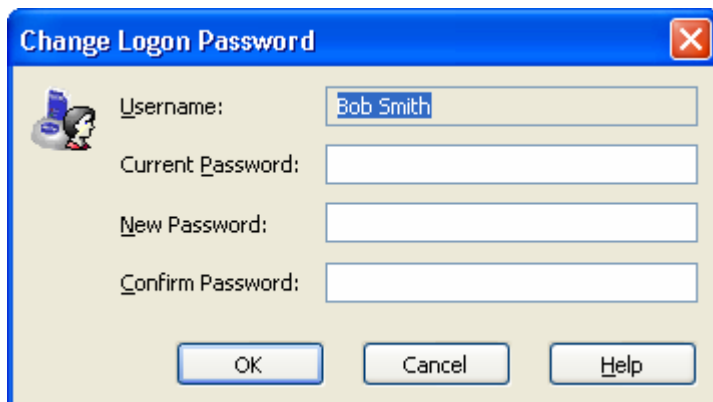


Every logon attempt, whether successful or not, may be recorded automatically in the audit logs by the administrator. As a security measure, the network administrator may configure the [LogTag User Server](#) (see "User Server" on page 121) software so that a user account becomes locked and therefore temporarily inaccessible if a certain number of consecutive failed logon attempts are made to the user account. Please contact your network administrator if you have problems with the logging on the software.

How users change their password

When the software has been [customized](#) (see "Customising the software" on page 96) to be connected to the [LogTag User Server](#) (see "User Server" on page 121) software, the network administrator may require and/or permit users to change the password used to logon to the software. Users are only permitted to change the password for the user account that is currently logged on, which is typically their own, and as a security precaution, users will always need to supply their current logon password before being permitted to change it.

The network administrator may enforce certain rules pertaining to what is a valid password. For example, they may require a minimum number of characters (digits, letters or symbols) and/or a minimum number of digits to be included in the password. Please contact your network administrator if you have problems with the logging on the software.



Passwords should be chosen such that they would be difficult for some one else to guess. If another person was able to guess the password they would be able to logon and impersonate the user. Therefore, following are a few points to remember when changing a password:

- 1 Do not use something that is personal to the user. Birth dates, license plate numbers, names of family members, types of vehicles owned, favorite foods and address of residence are all examples of passwords that should NOT be used.
- 2 Do not write it down.
- 3 Change the password on a regular basis.

If a user's password is forgotten, the network administrator will be able to change it. However, network administrators will not be able to see and therefore inform users what their current password is.

CHAPTER 9

Getting more information

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Finding your software version

Within the "Help (see "Help Menu" on page 130)" menu, is the "About LogTag Analyzer..." command, which will display a Window similar to the following picture.



Figure 29: About LogTag window

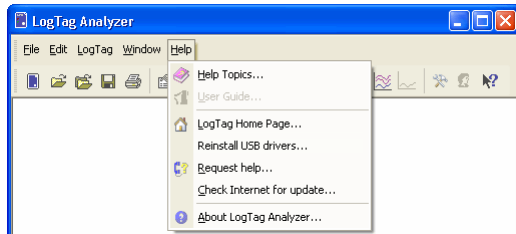
Within this window, amongst other information, the full version number of the software being used is displayed. This information is useful, for example, to determine if the same software version is installed on multiple computers and/or if the user guide being referenced refers to the version of software being used.

For example, if the window shows the software to be "LogTag Analyzer 2.2" and the version of this guide is 2.2, then the contents of this user guide refer to the version of software being used. If however, this window shows the software to be "LogTag Analyzer 1.0" and the version of this guide is 2.2, then this version of the user guide does not refer to the version of the software being used. The version of this guide is 2.2, which is also shown on the cover page of the guide.

Each time the software is updated one part of the version number of the software is always increased. The "Build" number portion is increased for a given version of the LogTag Analyzer software when the change included in the software will not affect the matching version of the user guide. For example, version 2.2 of the guide refers to both the "LogTag Analyzer, Version 2.2 Build 2" and the "LogTag Analyzer, Version 2.2 Build 5" of the software.

Getting more help

The time may arise when this guide is unable to provide you with the assistance you require. The LogTag Analyzer software includes a way to make the process of getting further assistance from LogTag Recorders as simple as possible, while providing the support team at LogTag Recorders with enough information about your system to be able to provide you with useful assistance. Within the "Help" menu of the software is a "Request help..." command.



This command will gather non personal information from your system to include in the e-mail, which you can review if you want to, so that LogTag Recorders will be informed of the relevant information about your system in order to provide you with quality and useful assistance.

The software will also try to collect as much information as possible from any logger in an interface attached to the computer. It is therefore important you do not remove any logger from attached interfaces while this process continues. You will see following warning message displayed on screen:

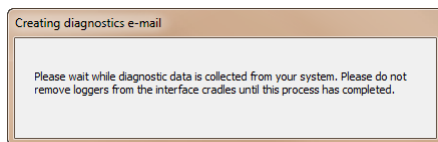


Figure 30: Diagnostic data collection

The file(s) attached will have a *.mem (for **memory**) file extension which can only be viewed with special diagnostic software by LogTag Recorders, but not with LogTag Analyzer software.

Please also include in the e-mail as much and detailed information as possible about the problem that you are experiencing with the recorders or the software, even if you do not think it is relevant, as the more information is available, the more likely LogTag Recorders will be able to provide you with an appropriate solution quickly.

If you have suggestions for software improvements, you may also use this method to send your ideas to LogTag Recorders, as we are always in the process of improving the software and adding additional features to it, so that the software becomes increasingly more efficient, effective and useful for users.

CHAPTER 10


Appendix

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Troubleshooting

Problem	Solution
My LogTag appears to be "dead". No lights are flashing.	<p>This could represent either of two conditions:</p> <ol style="list-style-type: none"> 1 The LogTag is ready to start, but has not been started yet. 2 The LogTag is simply in a state where the configuration has the LED flashing turned off. This is an option that may be selected when a LogTag has been shipped to the user for the first time (to preserve battery life) or it may be that the last configuration setting selected no LED display. 3 The LogTag is in "Hibernation" mode. Refer to "Prolonging battery life (see "Hibernation - Prolonging battery life" on page 48)" for further information. 4 The battery is dead and the LogTag is expired. <p>How to test:</p> <ol style="list-style-type: none"> 1 Try pressing the START MARK button on the LogTag. 2 Start the LogTag Analyzer software and place the LogTag into the Interface Cradle. Download the LogTag. If the LogTag can be identified by the software, then the battery is good, and the LogTag is OK.
I am unable to get a serial port "free". Every time I run the software, every port shows that is already in use	On rare occasions it may be difficult to configure some computers for releasing the assignment of a serial port from one application to another. Often, this will require the services of a computer technician or expert. One simple solution is to purchase a USB Interface Cradle. USB connections do not have a "free port" limitation.
What happens if there is an electrical current between the contacts...will that damage the LogTag?	The contacts are isolated from the critical internal component such that incidental static discharge will not harm the LogTag. Deliberate application of a full outlet voltage (100 – 240 volts AC or 12-24 volts DC) to the LogTag may cause permanent damage.
I cannot view the user guide that came with the software.	The User Guide is in a 'PDF' file format and as such a special software package called "Acrobat Reader" is required to view it. Acrobat Reader is available for free download from the Adobe web site and can typically be downloaded from http://get.adobe.com/reader/ (http://get.adobe.com/reader/)

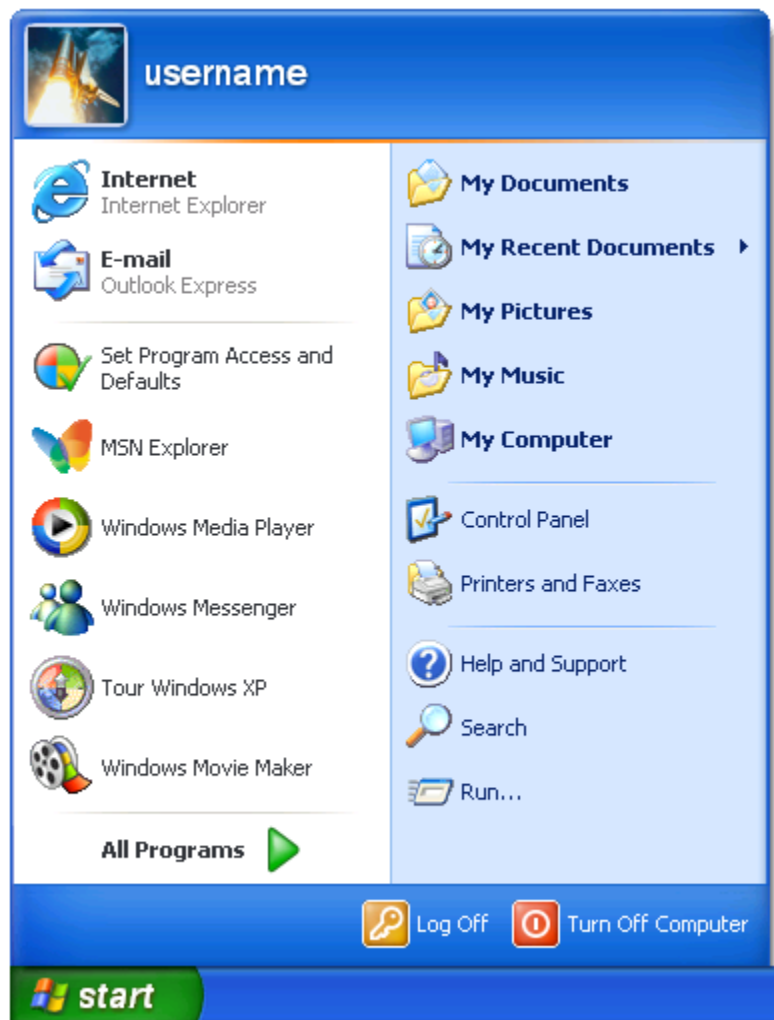
<p>I cannot see all the readings in the "data" screen, some appear to be missing.</p>	<p>The range of readings shown in the data screen represent the range of readings shown on the Chart screen. Whenever the Chart is zoomed in to show more detail the range of readings shown in the data screen is updated as well. If the chart is zoomed out () to show all readings that were recorded, then the data screen will also show all the readings that were recorded.</p>
<p>Why are some of the readings shown "non validated".</p>	<p>The LogTag automatically inserts error detection codes every 127 recordings which checks for the detection of corrupted or manipulated data. If the LogTag has been configured to do continuous recording (see "Continuous operation" on page 42) then as each block of 127 logs is started to be replaced with the latest readings the data integrity error check for the "oldest" block will fail, which will therefore technically putting the block of data into doubt. This is not a problem rather that the particular block of data now has the lost a degree of data integrity protection and hence is labelled 'non-validated'.</p> <p>Non-validated readings can also occur if there has been communications issues during data transfer from the LogTag or if the memory does actually have a fault, however these causes are very rare.</p>

If above suggestions are insufficient, please check the website at www.logtagrecorders.com for more information, specifically the FAQ section.

Finding your computer specifications

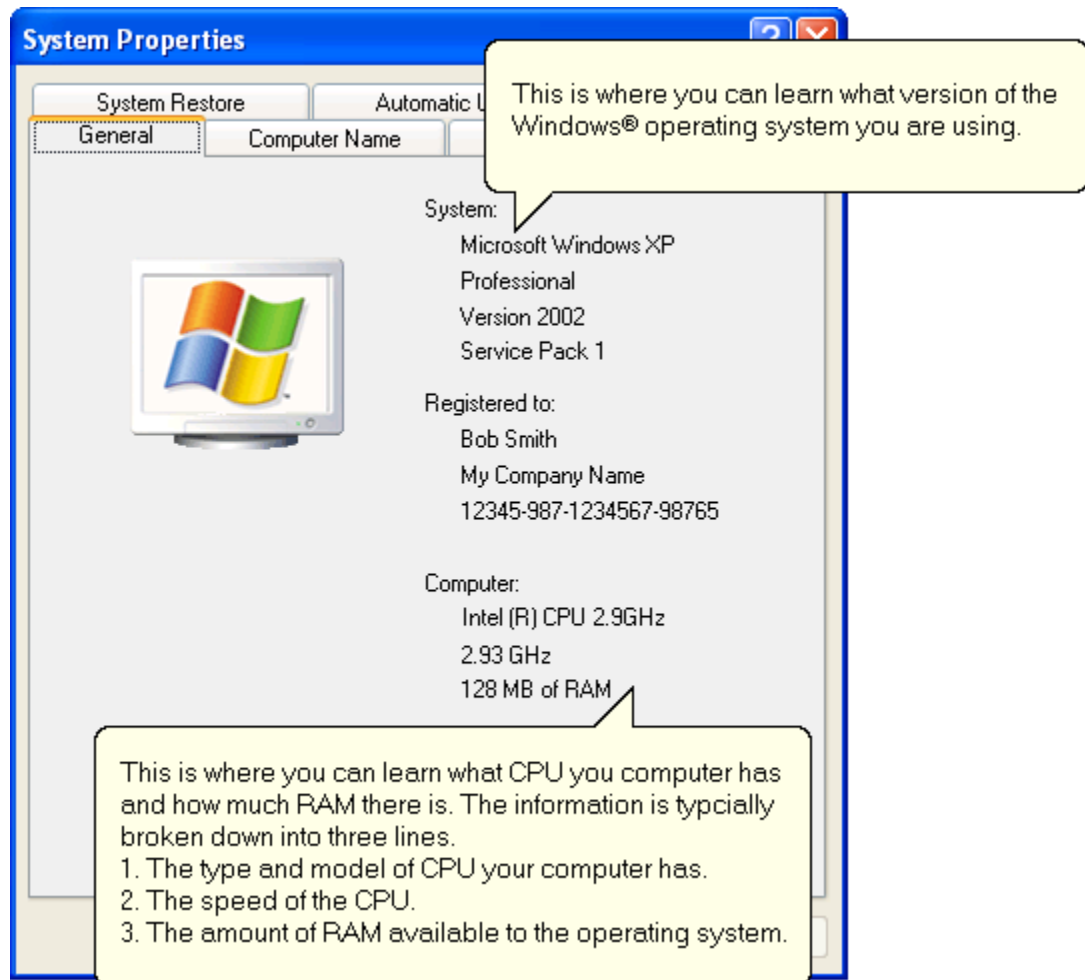
If you are unsure of your computer specifications you can find the relevant information by following these steps:

- 1 To determine your computer CPU, RAM and version of Windows Operating system:
 - a) Open the "Control Panel". This can be done by using the mouse to click on the Windows "Start" button, typically located in the bottom left of the screen, to open the Start menu.
 - b) Once the "Start" button has been clicked, you will see a menu appear.
 - c) If your menu looks similar to the following picture, click on the visible "Control Panel" item.



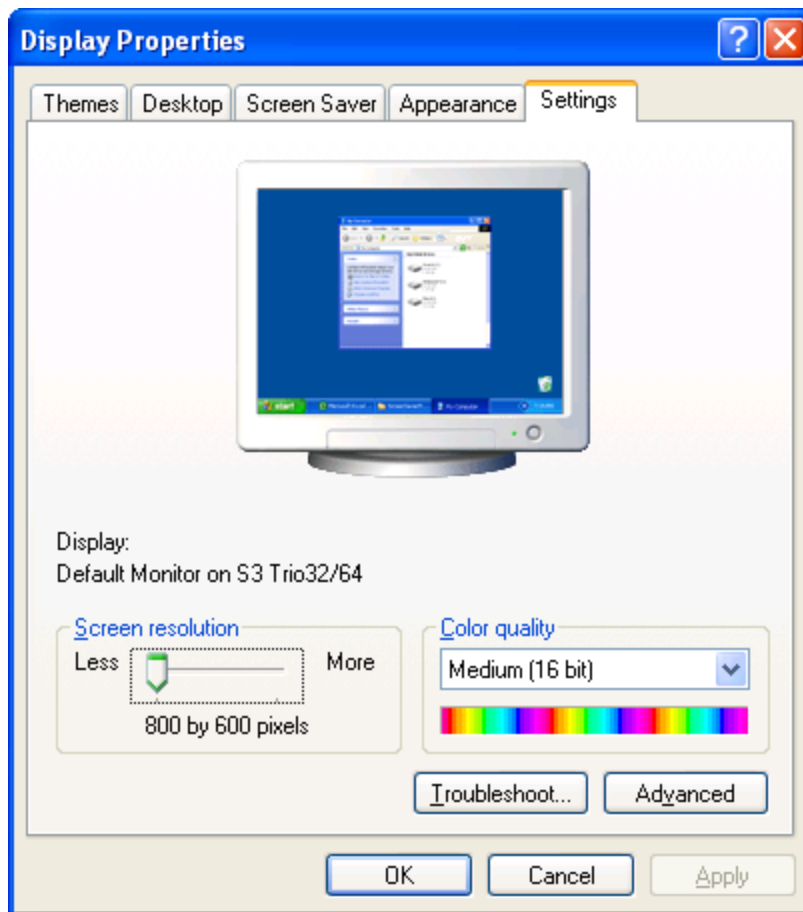
- d) Within the "Control Panel" window there is a "System" icon. For Windows XP users, you may need to "Switch to Classic View" to locate the "System" icon quickly. Start (open) the "System" icon once you have located it.

- e) Clicking on the "General" tab at the top of the "System Properties" window, which is usually the default, will display the relevant information for you about your system.



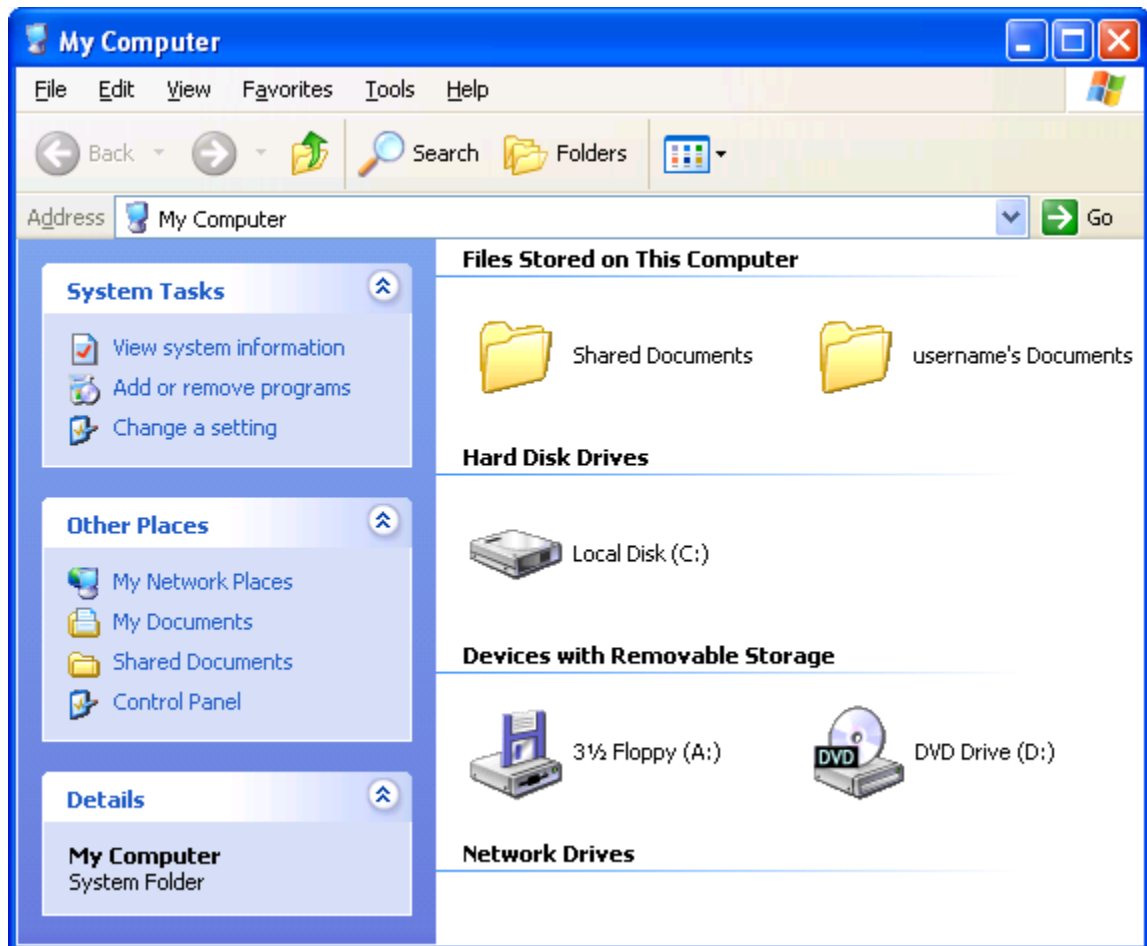
- 2 To determine your screen resolution and colors:
- Open the "Control Panel" as explained in step 1.
 - Open the "Display" item.
 - Click on the "Settings" tab at the top of the "Display Properties" window will display the relevant information for you about your display.

- d) From the "Settings" portion of the "Display Properties" window you will see your current screen settings and you may also be able to change some of your display settings if you want.



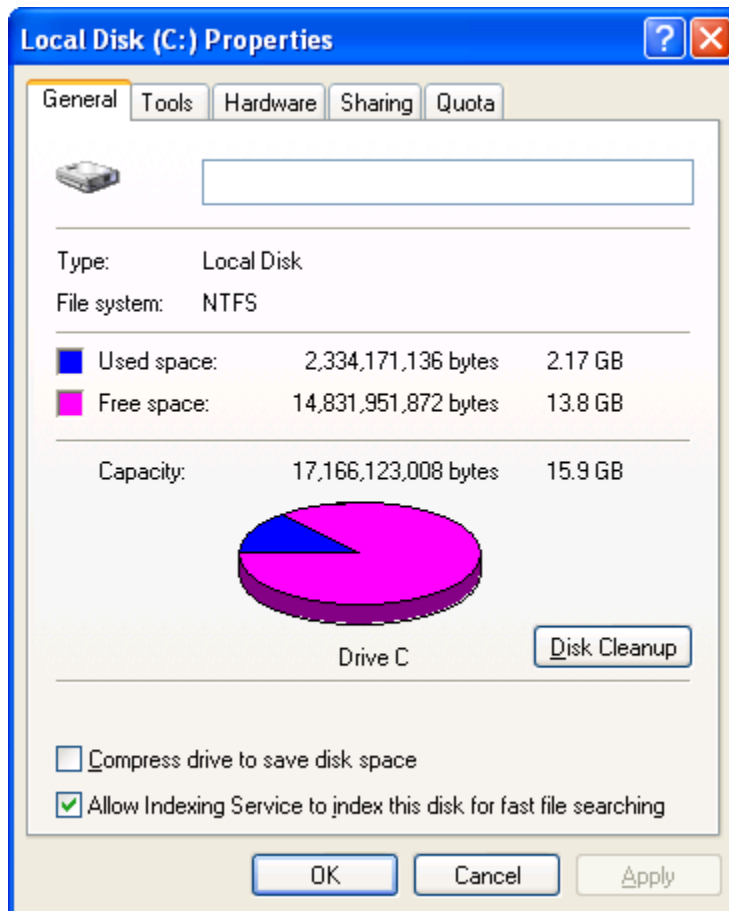
- 3 To determine your spare hard disk drive space:
- a) Open "My Computer" which is typically located on your desktop and/or within the Windows "Start" menu.

- b) Using your mouse, click the button on the right over the drive that includes "(C:)" in its description.



- c) Select "Properties" (left mouse click) from the popup menu that will appear.

- d) Clicking on the "General" tab at the top of the drive properties window will display the relevant information for you about your hard drive.



- e) If you have multiple (hard disk) drives installed on your computer you can repeat steps (b) through to (d) for each drive to get the same type of information.

Resolving USB Driver Problems

Every USB device requires the appropriate driver files to be installed prior to them being successfully used on a computer. The installation process of the LogTag Analyzer software will attempt to ensure the appropriate driver files are installed on the computer.

The USB drivers included in the LogTag Analyzer installation program are Microsoft WHQL certified. They can also be downloaded through the Windows Update service. If USB Interface Cradles are connected prior to running the LogTag Analyzer installation program, Windows will attempt to install the drivers through Windows Update. If your computer is not connected to the internet, or you choose not to let Windows search for the driver online, you will need to manually update the drivers on your system.

It is strongly recommended that the software is installed prior to any USB Interface Cradles being connected to the computer.

The following sections will guide you through the steps necessary to determine whether or not a problem exists with the installation of the USB drivers for the USB Interface Cradle are installed correctly on the computer and, if necessary, how you can resolve a problem with the installation of the USB drivers.

In This Section

Checking the installation of the USB driver	154
USB driver installation through software installation	158
Manual USB driver installation on Windows XP	160

Checking the installation of the USB driver

The following will guide you through the steps necessary to determine whether or not the drivers for the USB Interface Cradle are installed correctly on the computer.

- 1 Providing the LogTag Analyzer software has been already installed, connect the USB Interface Cradle to the computer by plugging the Interface into an available USB socket. USB sockets are typically located at the rear of the computer.



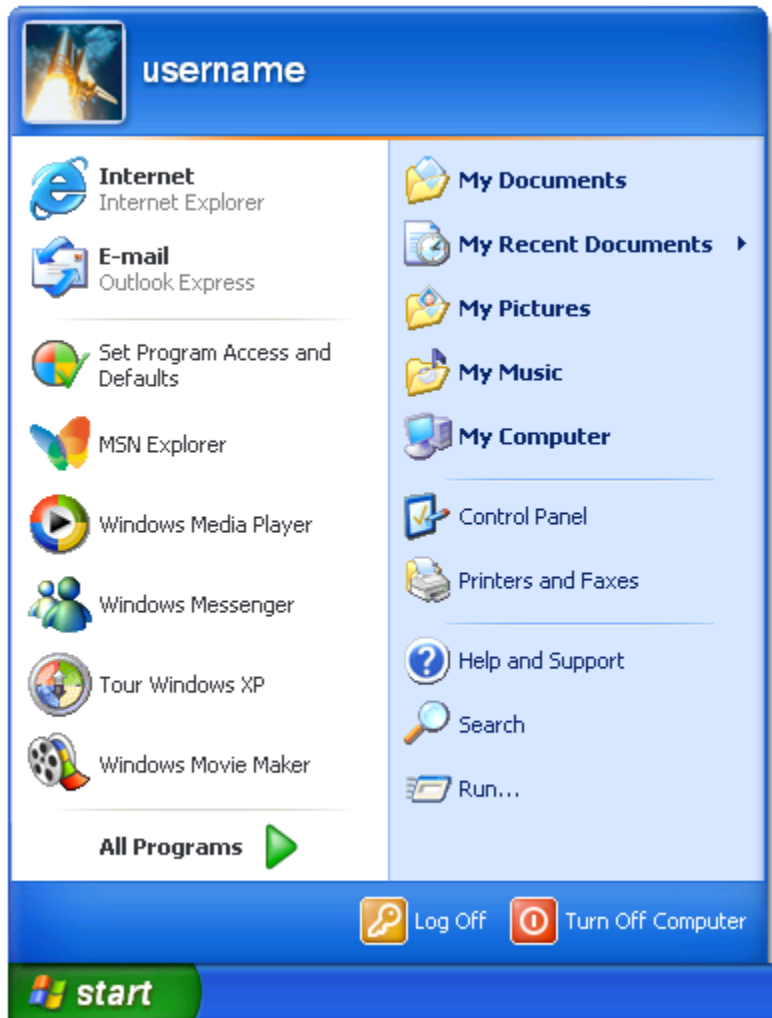
USB ports on the computer



USB Interface connector

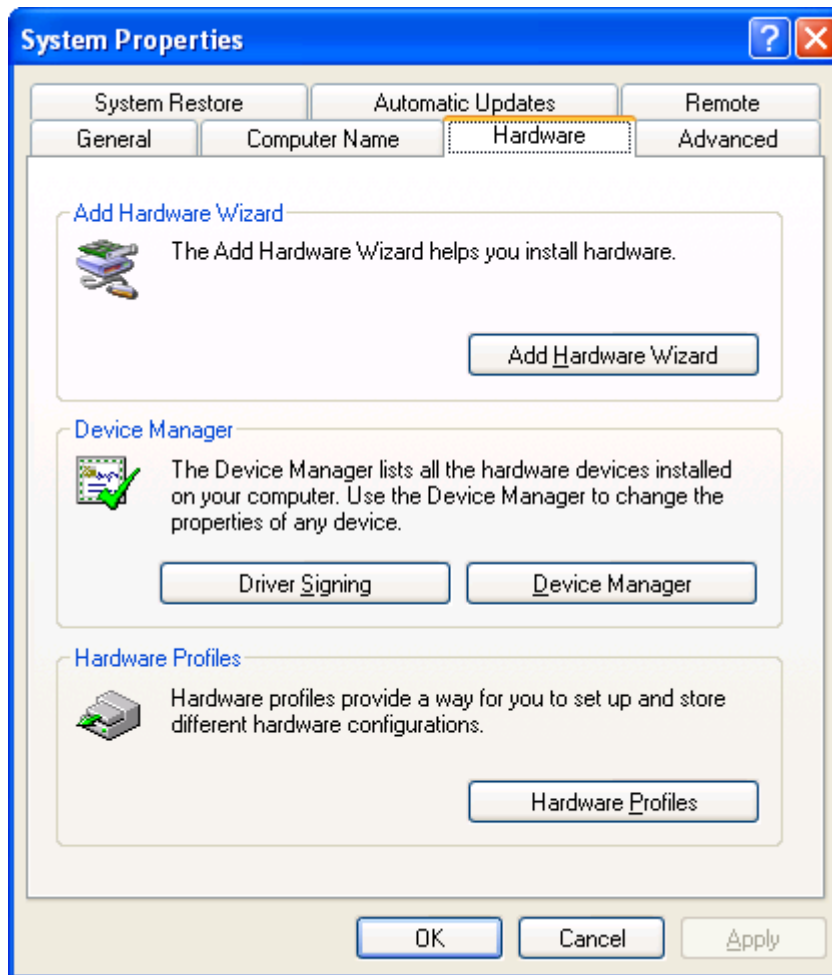
- 2 Open the "Control Panel". This can be done by using the mouse to click on the Windows "Start" button, typically located in the bottom left of the screen, to open the Start menu. Once the "Start" button has been clicked, you will see a menu appear.

- 3 If your menu looks similar to the following picture, click on the visible "Control Panel" item.

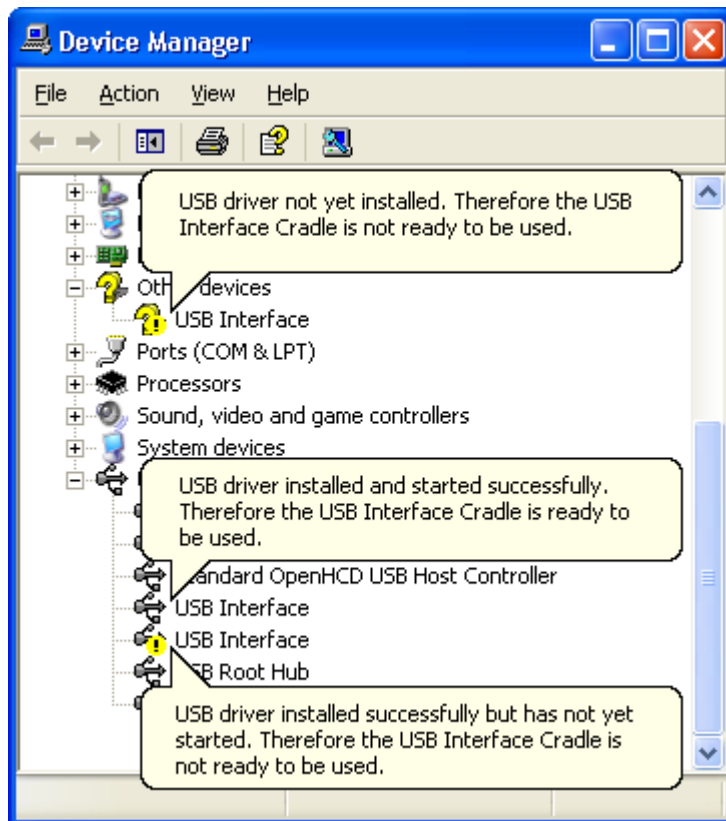


- 4 Within the "Control Panel" window there is a "System" icon. For Windows XP users, you may need to "Switch to Classic View" to locate the "System" icon quickly. Start (open) the "System" icon once you have located it.

- 5 If your system properties looks similar to the following picture, click the "Hardware" tab followed by the "Device Manager" button to open a view of the devices that have and have not been successfully installed on the computer.



- 6 Once the device manager is open you should see one of the three following images in the list, as indicated in the following picture. You may need to click on the "+" beside the "Universal Serial Bus controllers" entry to view all the USB devices that have been installed on the computer.





If the USB device driver installed successfully but has not yet started, the following will guide you through steps necessary to start the USB drivers so that you can start using the USB Interface Cradle(s).

If the computer is using Windows XP:

- 1 Open the "Device Manager" as described previously.

- 2 For each "USB Interface" entry displayed, using the mouse (pointing device), click the right button on the text of the "USB Interface" entry to display the popup context menu, which will be similar to the following picture. Once this pop context menu is visible, select the "Uninstall" option, using the left button on the mouse.



- 3 Unplug all USB Interface Cradles that are plugged into the computer and/or are plugged into any USB hub that may be connected to the computer.
- 4 Wait for at least 5 seconds.
- 5 Plug the USB Interface Cradle(s) into the appropriate USB socket on the computer and/or USB hub that is connected to the computer. This should install and start the USB driver for the USB Interface Cradle(s). If the drivers do not successfully start, indicated by the "USB Interface" entry appearing in the device manager with either the  or the  picture, you may need to reinstall the USB driver files, which is described subsequently.

If the USB device driver files did not install correctly, you may either reinstall the software or manually install the USB driver files. This set of USB drivers was first released with the LogTag Analyzer software version 1.7. If you have a version of the software prior to this, get a copy of the latest version of the LogTag Analyzer software and install the latest version of the software ensuring the all USB Interface Cradles are not connected to the computer during the installation process.

USB driver installation through software installation

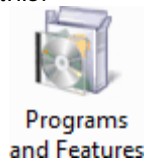
You can install the USB drivers by re-installing the LogTag Analyzer software :

- 1 Unplug all USB Interface Cradle(s) connected to the computer and/or connected to a USB hub connected to the computer.
- 2 Start the Windows "Control Panel"
- 3 Within the "Control Panel" window there is an icon which allows you to un-install or change already installed programs:

- In Windows XP it is called "Add or Remove Programs" and looks like this:



- In Windows VISTA and Windows 7 it is called "Programs and Features" and looks like this:



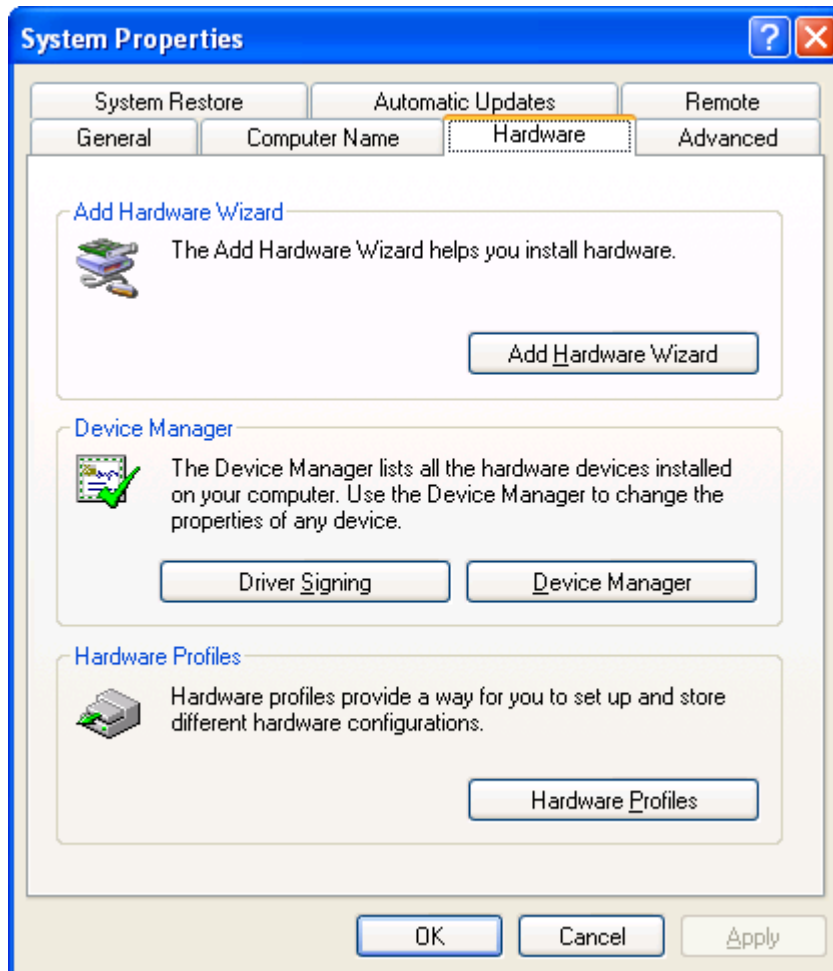
You may need to "Switch to Classic View" to locate this icon quickly.

Start (open) the "Add or Remove Programs" icon once you have located it.

- 4 Locate the "LogTag Analyzer" entry and click the "Change" button.
- 5 Once the "LogTag Analyzer Setup Maintenance" window is open, select the "Repair" option and then click the "Next >" button.
- 6 Click the "Finish" button when it is displayed to complete the reinstallation of the software and USB driver files.

Manual USB driver installation on Windows XP

To manually update the USB driver files, for Windows XP computers, open the "Device Manager". The "Device Manager" can be started by opening the "System" icon, located in the Windows "Control Panel", selecting the "Hardware" tab in the "System Properties" window and then click the "Device Manager" button.

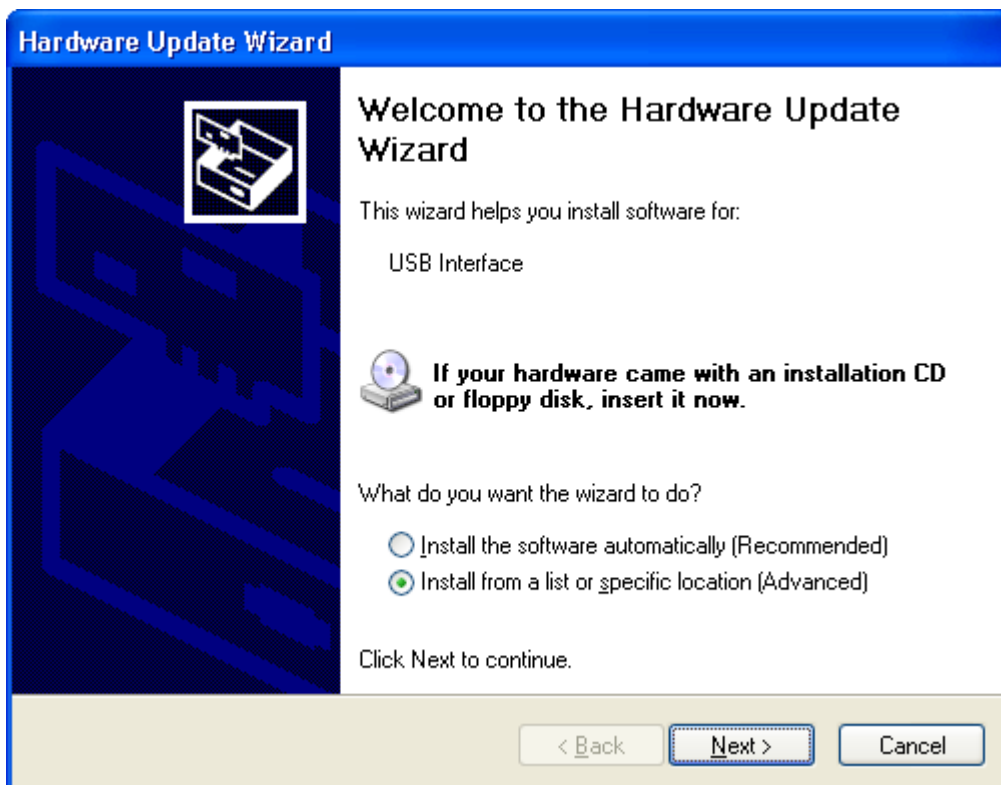


- 1 Using the mouse (pointing device), click the right button to display the popup context menu, which will be similar to the following picture.



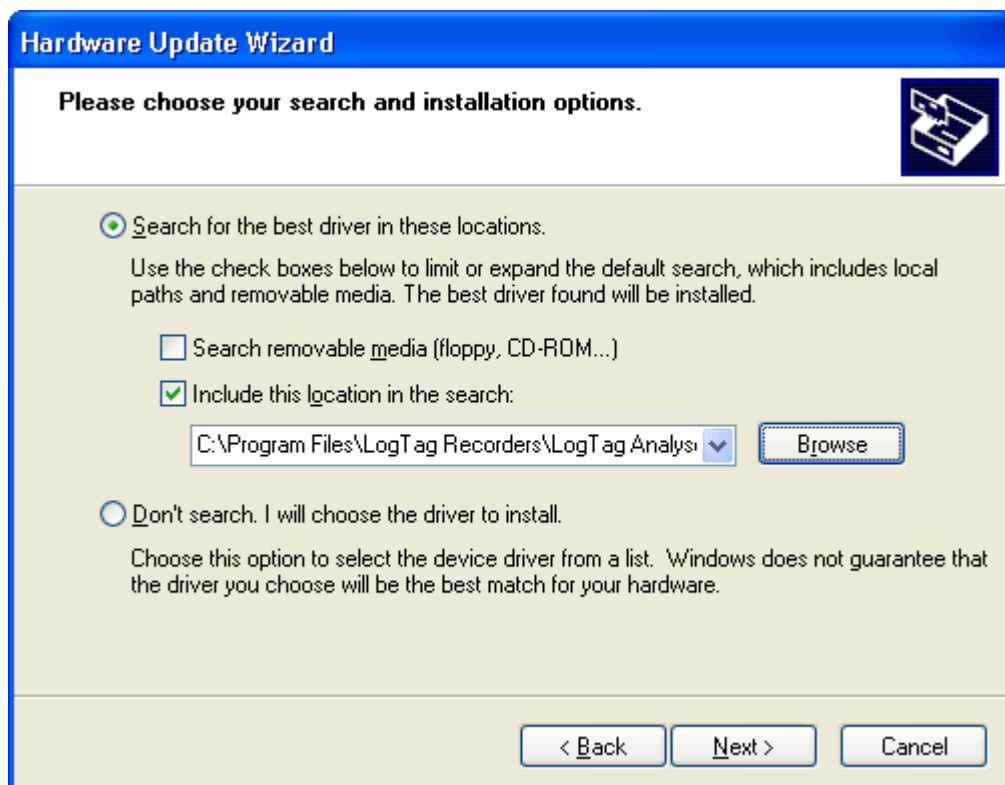
- 2 Select the "Update Driver..." option, using the left button on the mouse, which will cause the device driver wizard to start, similar to the following picture.

You can either let Windows search and download the USB driver online from Windows Update, or select the "Install from a list or specific location (Advanced)". Click the "Next >" button to continue.



- 3 When prompted for the location of the driver files, enter the location of the installation of the software followed by the path to the USB driver files. The default location for these driver files is "C:\Program Files\LogTag Recorders\LogTag Analyzer\Drivers\i386" ("C:\Program Files\LogTag Recorders\LogTag Analyzer\Drivers\amd64" for 64-bit Windows

systems). You may use the "Browse..." button in the window that appears, similar to the following picture to help you locate the appropriate folder.



- 4 Once the driver files have been installed successfully you will see a window similar to the following picture. You may now connect and start using your USB Interface Cradle(s).



Sensor Responsiveness

Temperature sensors typically respond to changes in the environment temperature in a logarithmic way and as such you will find that the responsiveness of temperature sensors (how quickly a sensor responds to an environmental temperature change) is expressed in terms of T90. T90 represents the time it takes for a logger to respond to 90% of the actual change of the environmental temperature.

For example, if the actual environment temperature suddenly changed from 15° to 45° and the T90 of the sensor was 30 minutes, then 30 minutes after this sudden change the sensor would be reading $(15 + (45 - 15) * 0.90)$ 42°. In reality, it is rare for the temperature of an environment to suddenly change to a very different temperature and then suddenly change again, usually it is a gradual incremental process.

For example, if the actual environment temperature changed from 15° to 45° over a period of 5 hours in a linear fashion, that is after 2 hours the temperature was 27° and after 4 hours the temperature was 39°, and the T90 of the sensor was 30 minutes, then when after 5 hours of this temperature change, that is the actual environment temperature was 45°, the sensor would be reading 44.7°.

LogTag products are designed to produce rapid response to environmental changes. For example, the TRIX-8 model achieves a rapid response to temperature changes because the actual sensor element is external to the logger body itself. The T90 of the LogTag TRIX-8 is typically less than 5 minutes in moving air, which is very responsive as some internal sensor temperature recorders can take up to an hour for the T90 of the temperature change to be recorded.

Frequently Asked Questions

USB Installation Issues

Q: I am having difficulties communicating to my USB interface.

A: Driver installation with USB devices can sometimes have problems that are outside the control of LogTag Recorders. We would advise to read through the [special manual on USB installation](http://www.logtagrecorders.com/software/pdf/resolving%20USB%20installation%20issues.pdf) (<http://www.logtagrecorders.com/software/pdf/resolving%20USB%20installation%20issues.pdf>) available for download from the LogTag® website.

Occasionally the drivers de-register themselves, which is an issue of the operating system. In this case, simply unplug the USB interface and plug it back again (for at least 10 seconds, this should resolve the issue).

It is highly unlikely that a USB interface is faulty.

Q: Are the USB interface drivers certified by Microsoft?

A: Yes, the drivers have been certified in versions 1.7R14 and later.

Older versions of LogTag Analyzer used the unsigned drivers, and we strongly recommend you update your software to the latest version. Functionally both drivers are identical, which is why they will not be automatically installed when you upgrade from a version prior to 1.7R14. You may still upgrade your drivers to the signed version by selecting the optional hardware upgrade (FTDI USB interface) as part of the Windows® Update feature. If you wish you can also update the drivers by selecting "Update Driver" through the Windows® System Device Manager.


Please note this needs to be completed separately for every USB port with an interface connected.

You must have at least Windows® XP or Windows® Server 2003 Operating Systems installed for the drivers to be available through Windows® Update.

Q: The LogTag Analyzer Installer asks for all USB devices to be disconnected – what do I do?

A: When the LogTag Analyzer Installer determines that the USB drivers need to be updated while one or more USB interface cradles are connected, it will prompt the user to disconnect them.

You will only need to remove your LogTag® USB equipment, having other USB devices like Mouse, keyboard or memory sticks connected during this process is OK. Once you have disconnected the USB interface cradles, the "Next >" button in the installer will allow you to continue with the installation.

However, if the USB drivers do not successfully unload, because for example the Analyzer software is running, when you click the  button, the installation software will prompt you to disconnect the USB interface cradles again. To force the USB drivers to unload, please follow the manual removal steps described in the next question.

Q: How do I uninstall my LogTag Interface cradle USB Interface drivers completely?

A: Following steps are required to uninstall USB interface drivers completely:

- 1 With USB interface cradle plugged into the computer, Open "Control Panel" - "System". Select the "Hardware" tab in "System Properties" and select the "Device Manager" button. Scroll to the "Universal Serial Bus controllers" entry, expand the list by clicking on the "+" symbol. Right click any "USB Interface" entries and select the "Uninstall" command from the popup context menu.
- 2 Open "Control Panel" – "Add/Remove Programs", highlight the LogTag USB interface drivers and select "remove"
- 3 Delete usbint.inf and usbint.pnf
- 4 Delete ftdibus.sys from Windows/system32/drivers folder
- 5 Delete all DLL's starting with "ftdi" from Windows/system32 folder.

Software Installation/Uninstallation issues

Q: Can I use LogTag Analyzer with Windows 7?

A: Yes, LogTag Analyzer versions 1.9r12 and later are fully compatible with Windows 7 in both the 32-bit and 64-bit versions.

The USB Interface drivers are now available through the Windows 7 update feature as well as being installed as part of the software installation. Since the detection process is faster when installing the drivers from a local disk we still recommend you install the software before you plug the interface into a USB socket.

We recommend that any version prior to 1.9r11 be upgraded through the "Help-Check Internet for Update" facility from within LogTag Analyzer.

Q: Can I use LogTag Analyzer on an Apple Mac?

A: You can use LogTag Analyzer versions 2.0r17 and later on an Apple Mac computer, however you must use a virtual machine software such as VMWare Fusion, Parallel Desktop or similar. You can find a summary of the steps in the document about "Installing LogTag Analyzer on an Apple Mac".

Can I use LogTag Analyzer with Linux?

Q:

A: You can use LogTag Analyzer versions 2.0r17 and later on computer running Linux OS, however you must use the translation layer software WINE (see <http://www.winehq.org/>). You can find a summary of the steps in the document about "Installing LogTag Analyzer on Linux".

Can I use LogTag Analyzer in a Citrix environment?

Q:

A: You can use LogTag Analyzer versions 2.0r17 and later in a Citrix environment, however there are certain restrictions. You can find a summary of the requirements in the document about "Installing LogTag Analyzer in Citrix environments".

How can I uninstall LogTag Analyzer completely?

Q:

A: Open "Control Panel" – "Add/Remove Programs", or "Control Panel" - "Programs and Features" highlight the LogTag Analyzer section and select "remove"

On some occasions this may not remove every single file from your computer. In that case please delete following files also:

- all LogTagIO*.dll files in #Windows#\System32 folder
- userprofile.dat file from C:\Documents and Settings\#USER#\Application Data\LogTag®
In VISTA, this file is located in C:\Users\#USER#\AppData\Roaming\LogTag®

Q: HELP – I have accidentally switched to a different language and now I don't know where I am!

A: Exit the LogTag Analyzer software and delete the file "userprofile.dat" from C:\Documents and Settings\#USER#\Application Data\LogTag. In VISTA and Windows 7, this file is located in C:\Users\#USER#\AppData\Roaming\LogTag. You may need to change the display settings in Windows Explorer to be able to navigate to this file (Note: The Windows search feature will likely not find this file). Please refer to the Windows Operating System's online help. Once this file is deleted, the software menus will be displayed in English or the same language of the operating system, if LogTag Analyzer software includes support for that language. Please note, that other settings you may have made like Communication port settings or default chart parameters will be lost.

LogTag Communication Issues

Q: The LogTag Access Wizard reports "COM1, COM2, COM3, COM4 not found", what do I do?

A: This error means that LogTag Analyzer can not find an interface plugged into any of these ports. If you are using an RS232 interface, and it is not found by the software, the most likely cause is the plug not being inserted correctly.

If you use a USB interface, and you do not wish to see this error message all the time, simply go to "Options" – "Communication Ports" and remove the tick in front of the Communication ports you are not using. This will also speed up your download process as the software no longer uses these ports.

Q: I am getting an error message "Internal error: \$4:USB.0012345"

I am getting an error message "LogTag failed to respond [20]" – what do these mean?


- A: "Internal error \$4" and "LogTag failed to respond [20]" are very general error messages which simply mean that LogTag Analyzer found an interface and a LogTag unit inside the interface, but was unable to establish communication. In other words, at these errors mean there was no reply from the LogTag. The letters and numbers after \$4 represent type and serial number of the interface. Often this error will disappear by simply repeating the action you were performing when the error occurred, but sometimes it can be a bit more difficult to locate the cause. Here are some scenarios in which these errors could occur and what to do to rectify the issue:
- There is poor contact between the LogTag and the interface contacts; this can happen if the contacts are dirty or have suffered from exposure to a corrosive environment. Usually this can be rectified by cleaning the contacts on the LogTag (a good way is to use a soft pencil eraser.)
 - There is a "stuck" contact pin in the interface; look inside the slot – there should be three contact pins visible, they should slide in and out with moderate resistance when force is applied (e.g. with the end of a pencil)
 - There is not enough power to the interface (USB); We have seen this error when USB interfaces are used on unpowered USB hubs with other equipment also connected. USB ports have a limited ability to supply power and we would always recommend to connect the USB interfaces directly to the computer or to use a powered hub.
 - Communication has been interrupted prematurely; sometimes a user will disconnect the LogTag too early, which will cause this error to be displayed. In this case simply re-do the action with the LogTag connected properly throughout the communication.
 - The USB port is defective; Try a different port and see if the error persists.
 - The LogTag battery is critically low; This could happen after a long trip, and would be amplified by trying communication if the unit came out of a cold environment. Lithium cells and in fact all batteries do have the habit of exhibiting a lower battery voltage in cold conditions, so downloading units that have come e.g. directly out of a freezer could experience communication problems. In that case it may pay to wait until the unit has acclimatised to room temperature or slightly above.
 - There was water in the unit; individual LogTag models have different ingress protection and are not waterproof. If there is water ingress the unit will keep working for a time, but eventually the communication will cease to work.

Q: I am getting an error message with a strange code – what does it mean?

- A: Please find a summary of error codes and solutions [here](#) (on page 175).

Configuring a LogTag

Q: My LogTag can not be configured!

- A: Some LogTags are purchased as single trip loggers and can not be reconfigured once used to record a trip. This will be shown by a lock symbol  next to the USB interface in the Configure screen. The LogTag will need to be returned to your distributor to have the lock removed. There may be a charge for that.

Q: I can start a LogTag by pressing the start button, how do I stop it logging?

- A: Logging cannot be manually stopped on the LogTag itself. If you want a LogTag to stop recording at a specific time, select a specific number of readings or select a specific time period to be covered in the "configure for next use" screen. The LogTag will then stop recording data when that point is reached. If you choose "Record Readings Continuously", the oldest recording will be overwritten once the memory of the LogTag is full, and the LogTag can only be stopped by re-configuring or hibernating it with the LogTag Analyzer Software. An exception to this are TRID30-7 and TRED30-7 loggers, which can be stopped with the Start/Stop/Clear button, but this feature must be enabled when the loggers are configured.

Note that if you wish to indicate when a load has safely reached its destination, you can use the "Inspection Mark" feature instead of stopping the LogTag. When the "Start-Mark" button is pressed while logging is in progress, an inspection mark is inserted in the recorded data. This enables confirmation that the load has been manually checked at certain times in the journey, and also enables the recipient of the shipment to show when the load arrived at its destination.

Q: What happens if I press the "Again Button" with a different type of LogTag?

- A: You can reconfigure different types of LogTag with the "Again" button, however recommend caution when doing this. LogTag Analyzer Software will only set those parameters that are present in both LogTags. If you enter a HAXO-8 after you just configured a TRIX-8 only the temperature parameters will be correctly set.

Q: What exactly is Pre-Start fail-safe logging?

- A: This function allows the LogTag to record temperature data even if the "Start" button is not pressed. When a logger is configured for push button start using LogTag Analyzer software the user has to press the "Start" button to initiate data collection. This is usually done when the LogTag is placed in the consignment of goods. If, however, the user forgets to press the "Start" button, the logger will still collect data in "pre-start" mode, and this data can be viewed in the normal way using LogTag Analyzer. Pre-Start logging can be enabled or disabled when configuring the logger. Pre-start logs do not count towards the total number of readings configured. In other words, you can not expand the memory size by utilising pre-start logging. If a LogTag is configured to take readings up to its memory capacity and has pre-start enabled, the pre-start readings will no longer be available once the Start button has been pushed AND the LogTag has completed its intended full logging cycle. The pre-start readings will be overwritten to ensure the "main" recordings can use the complete memory.

Q: I want to start recording at a specific date and time – but the Software won't let me do that!

- A: Earlier versions of LogTag Analyzer did not support recording from a set date and time. Later versions do, so please upgrade to the latest version and you will be able to select "Date and Time" as a startup option in the configuration screen.

Using LogTags

Q: Can we use a LogTag to measure temperature of liquids?

- A: LogTags Trix-8 and HAXO-8 are not rated for direct immersion into any liquid without the use of a waterproof bag or casing. We do however have another version of the product, TREX-8, which is fitted with an external sensor. This external sensor is suitable for immersion. Specifications for this product are available on this web site

Q: Can we fit an external temperature sensor to a TRIX-8?

- A: Sorry, external temperature sensors can only be fitted to the TREX-8.

Q: How fast will TRIX-8 react to a change in temperature?

- A: The most common industry standard expression for temperature reading stabilisation time is the 'T90'. This is defined as the typical time taken of a given sensor in a given environment (e.g. moving air, still air, liquid etc) to register 90% of an immediate step change in temperature.

The T90 of TRIX-8 is typically less than 5 minutes in moving air of 1m/s.

As the thermal step response is basically dependent on the latent heat of the two thermal masses involved (the LogTag and the surrounding environment) and the rate of thermal transfer between them, the T90 is the same irrespective of the difference of temperatures though at extremes (water freezing and boiling points for example) the environment does not behave homogeneously thereby changing the rates of thermal conduction and therefore changing the resulting T90 value.

For example: in a situation of a 25°C step change say starting at 10°C and moving to 35°C in moving air of 1m/s, the TRIX-8 will typically register 90% of the step after less than 5 minutes - i.e. $0.9 \times 25 = 22.5$ -> $10 + 22.5 =$ registering 32.5°C within 5mins.

The T90 for a 15°C step in 1 m/s moving air (say 10°C to 25°C) will be the same. $0.9 \times 15 = 13.5^\circ\text{C} + 10 =$ registering 23.5°C within 5mins.

T90 is different in slower moving air or still air, though air is never totally 'still' when a temperature difference exists as convection will take place.

Q: What is the hibernate feature?

- A: LogTags can be switched to hibernate mode manually in the LogTag menu. When hibernated, all logging functions are suspended, all indicators are turned off and internal components are put into low power consumption mode. This reduces the current consumption on LogTags that support full hibernate to very low levels equivalent to around 1/10th or less current than normal operation. This basically extends the battery life to around the shelf life of the battery (5-10 years). All Humidity LogTags (HAXO-8) support this feature. LogTag Temperature (TRIX-8 & TREX-8) will support this feature from ex-factory units shipped June 2006 onwards. Units manufactured before this date are just put in the lowest possible power state no logging, no indicators blinking). Recorders are automatically 'woken up' from hibernate if they are placed in an interface and accessed and do not automatically return to the hibernate state. The green LED will blink every 8 seconds to indicate its 'awake' status, any previously recorded data, however, will no longer be accessible. Note that recorders may wake up from hibernate if static discharges into the contacts of the recorder as a result of handling the recorder after it has been hibernated.

Q: How long does a LogTag's battery last?

A: Unfortunately there is no clear cut answer to this question. Battery life is affected by many different factors:

- If the logger is permanently used in very cold temperatures (<20°C for example) battery life is reduced as the battery needs to work considerably harder to deliver the required power
- If the logger is permanently used in very hot temperatures (>50°C for example) the battery's internal self discharge increases as does the average current drawn by the electronics, hence battery life decreases
- If the download rate is high, battery life decreases
- If the alert LED blinks often, more power is used and battery life decreases
- If the logging rate is high, more power is used and the battery life decreases
- If the logger is hibernated between uses, battery life increases as the power consumption is at a minimum.

It should also be noted that not all battery cells have exactly the same characteristics. Although they are manufactured to stringent quality specifications, some cells have naturally longer life than others due to the processes used in their manufacture.

The published specifications state a 2-3 year estimated battery life in normal conditions, based on monthly download and 15minute logging. Clients have reported battery life as low as 18 months for applications of frequent downloading (twice a day) with relatively rapid logging (every minute or less). At the other end of the spectrum we have seen TRIX-8 well exceed 3 year battery life, particularly if they are hibernated between uses.

Q: How is battery condition shown and how can this be represented as %remaining?

A: The LogTag design in TRIX-8, TREX-8 & HAXO-8 loggers incorporates a 'battery status' circuit which measures the battery voltage and returns 'OK' or 'LOW' to LogTag Analyzer during configuration and download. This is just a status and it is not possible to calculate a %remaining battery life from this data. The point at which the battery reports 'LOW' is typically when around 15%-20% capacity is left, which in normal operating conditions is equivalent to around 3-4 months of typical use. Therefore if a unit shows 'OK' during configuration there is typically enough operational life left to complete a trip before being completely exhausted. A logger should, however, not be reconfigured and used again once the battery status during configuration is reported 'LOW', as this can result in unexpected behaviour and in a worst-case scenario cause data loss.

Please note that the LogTag battery status may sometimes temporarily read LOW if the LogTag is downloaded/configured immediately after being removed from a very cold environment due to the characteristics of the battery chemistry. In this case simply wait for the unit to be at room temperature (between 15°C and 30°C) before evaluating the battery status.

In SRIC-4, TRIL-8 and SRIL-8 loggers a new design has been incorporated with a much improved battery life monitoring system. These loggers now communicate the actual battery voltage to the software and keep track of the activity to allow software calculation of a '% battery life remaining' value once the battery capacity falls below 50% of its original value. The software can also calculate the estimated % remaining at the conclusion of a given configured logging trip and block configurations that appear to result in an exhausted battery before the trip end.

Downloading, Viewing and Saving Data from a LogTag

Q: I made annotations to my chart and changed the graph title before I saved it, but now they have disappeared – what did I do wrong?

A: LogTag Analyzer versions prior to 1.5 can not save any annotations directly to a file. This is a result of FDA Chapter 21 CFR Part 11 which prohibits a change to the LTD file data once downloaded from the LogTag. From version 1.5 onwards annotations are stored in a separate annotation file, which will satisfy the FDA requirements. This file allows annotations and Graph titles to be stored and retrieved for viewing later.

Q: What causes some of the data points on the charts to be non-validated? What is non-validated data?

A: LogTags use a very sophisticated method to automatically insert error detection codes during recordings. This assists in detecting corruption and/or manipulation of data. These error detection codes are saved with the file so any attempts to manipulate data in a saved file are also detected. Non-validated readings occur when a block of readings fails a data integrity check; these readings are displayed differently on the chart and data list. The most common cause for non-validated readings is when the LogTag has been configured to do continuous recording. As new data is written over a block of already existing recordings, the data integrity error check for the original block of recordings will indicate an error, thereby technically putting the block of data into doubt. The same mechanism is also responsible if the logger is not configured for continuous recording, but has been configured for pre-start readings. Once the logger is started by pressing the button, these pre-start readings are retained at the start of the memory, and the logger will overwrite them once the remaining memory is full, regardless of whether configured for continuous reading or not, thereby invalidating the first block of pre-start readings. Non-validated data may also be displayed if there have been communications issues during data transfer from the LogTag, or if problems occurred during logging where either the readings or the error detection code was not correctly written to memory. This situation may occur if the LogTag was operated in an environment far beyond the production specification (i.e. very cold or very hot or in a heavy industrial environment with high electro-magnetic fields present). In very rare cases this could be a result of a memory fault in the LogTag.

Q: My older network files get overwritten, but I have the Option "Always create a unique copy of files" enabled.

A: Some Network Attached Storage Devices (NAS Drives) use versions of SAMBA (Server Message Block) file servers which do not correctly report back whether a file exists or not. Consequently, LogTag Analyzer will overwrite an already existing file with the same name, regardless of the settings made in the Automation options. To check if your server displays this behaviour, set the appropriate storage location in the Options dialogue, configure a LogTag for 30 seconds logging and download the LogTag twice a few minutes apart. The second download should create a file with "...copy 1" attached at the end of the file name. If you cannot see this additional file in the storage location, you should select a different storage folder to maintain the integrity of your data. It is always good practice to include a field element into the file name that differentiates the file by its date or trip number.

Q: How is the downloaded data stored and how can this data be accessed if I send it to another person?

- A: Downloaded data are stored in a LogTagData file (*.ltd) which is a proprietary secure format that is tamperproof. This is a requirement in many applications and standards (such as the FDA 21 CFR Part 11 in the US).
- ltd files can only be accessed and viewed by LogTag application software, so if another person wishes to view the data on different computer then either they need to install LogTag Analyzer software (which is free for download and use) or the data needs to be exported to another format.
- LogTag Analyzer stores data in a folder which can be set in the Options, where you can also choose to automatically store data upon downloaded. LogTag Analyzer can export data either manually or automatically to formats capable of being imported by other applications such as MS Excel, however, data exported this way are no longer secure/tamper proof.

Q: I want to view data in Microsoft Excel – how can I export data?

- A: LogTag Analyzer has the option to save .CSV files, which can be read directly into Microsoft Excel. Please see your MS Excel documentation if you have difficulties with this step. To create a .CSV file there are three options you can choose from:
- In LogTag Analyzer, go to "EDIT" - "OPTIONS" and select "EXPORTS AND REPORTS". Tick the selection box next to "CSV (Comma delimited)" files. From now on anytime you download a LogTag a CSV file will automatically be saved together with the ltd file in the directory chosen in "File and Folder settings". This is usually the "My Documents\My LogTag Data" folder.
 - If you wish to export a previously saved file to Excel, open that file, select "FILE" - "SAVE AS", and in the drop down box "Save as type" at the bottom select "CSV (Comma delimited)". The file extension will be automatically be added. You can also select a list separator if you do not wish to use the default Windows separator.
 - When you are viewing any data or summary tab simply select "Edit" – "Copy" and paste it directly into an Excel spreadsheet

Servicing LogTags

Q: Can LogTag recorders be calibrated?

- A: Let us first start by explaining a common misconception about the meaning of certain terminology used in connection with calibration. *Calibration* is the process of checking a given instrument against a reference with a calibration table of values and errors being generated. Any instrument with a readout can be calibrated. What clients usually want is the ability to "adjust" a LogTag. Adjustment (or recalibration as it is sometimes called) is when an instrument is adjusted to read in accordance with a reference instrument. The readout of the instrument after the adjustment is the same as the reference instrument.
- All LogTags can be adjusted (re-calibrated) with an application called "LogTag[®] Calibrate". Please discuss this requirement with your local distributor. The LogTag is designed to operate to the published accuracy over the typical product life, provided it is operated in the rated environment defined in the product specification. Temperature calibration therefore should not be required, unless it is a third party requirement for the application in which the loggers are used. Due to the nature of the RH sensor it is advised that RH calibration is performed every 6-12 months, depending on the environment the logger is subjected to.

Q: My LogTag is reporting an empty battery, can I change it myself?

A: It is possible to change the battery in some of the LogTag products.

Following models have user replaceable batteries:

- TRID30-7R
- TRED30-7R

They come with instructions for battery replacement and use a commonly available battery.

Following models cannot have their batteries replaced:

- SRIC-4
- SRIL-8
- TRIL-8
- TRID30-7F
- TRED30-7F

For the remaining models the battery change process will involve opening the case; it requires some dexterity, soldering equipment and some electronics soldering experience:

- TRIX-8
- TRIX-16
- HAXO-8
- TREL-8
- TREX-8

You will need a replacement battery and a replacement front label. The battery and label are custom made and must be purchased from LogTag Recorders or an authorised distributor.

PLEASE NOTE THAT ALL NECESSARY SAFETY PRECAUTIONS MUST BE IN PLACE. THESE INCLUDE BUT ARE NOT LIMITED TO PROPER ANTI-STATIC PRECAUTIONS, EYE PROTECTION AND SOLDER FUME EXTRACTION. LOGTAG RECORDERS WILL NEITHER WARRANT NOR ACCEPT LIABILITY FOR ANY DAMAGE OR HARM CAUSED AS A RESULT OF PERFORMING THE FOLLOWING SERVICE OPERATION.

The process is as follows:

- 1 Hibernate the LogTag with the LogTag Analyzer software
- 2 Remove the front label, remove the countersunk screws and open the case
- 3 De-solder the battery from the PCB
- 4 Replace the foam dot on the battery
- 5 Solder the new battery in place, watch out for correct polarity
- 6 Re-assemble the case (reverse process of above dis-assembly)
- 7 Fit a new front label
- 8 Test the logger function correctly

LogTag Recorders also strongly recommends a calibration of a logger after the battery has been replaced.

The cost of the replacement components plus the cost of labour and calibration to do this job is typically much higher than the cost of a replacement logger. However, if you wish to proceed, you can enquire about the cost of a replacement battery and label with your local distributor.

LogTag Analyzer Error Codes

The following describes the error code values, their meaning and possible remedies. If problems do persist, please check that you have the latest version of the software available, which can be confirmed through the "Check for updates..." command in the "Help" menu.

Value	Definition	Possible Resolution
\$0	Operation completed successfully	
\$1	General failure	Obtain and install a newer version of the software. If problem persists please contact support for further assistance.
\$2	Unable to communicate – No access to the communication port	Unplug the interface for at least 10 seconds and then re-plug interface. Try connecting the interface to a different port socket.
\$3	File/disk error while accessing LogTag information within a file.	Use disk validation and repair tools, like scandisk or chkdsk, to attempt to repair the issue. Obtain and install a newer version of the software. If problem persists please contact support for further assistance.
\$4	Unable to communicate - No Response from LogTag	See description above. If unsuccessful, replace or return to distributor
\$5	Unable to communicate – Communication Port not responding	Check that an interface is connected, if not disable the usage of the port in the Options. Uninstall the port and then restart the computer. If using a converter, like a USB-RS232 cable, try using a LogTag USB interface cradle.
\$6	Memory allocation error	Software has run out of RAM to operate successfully. Close some applications that are currently running. Increase the physical amount of RAM in computer.
\$7	Invalid parameter in communication	An internal error. Obtain and install a newer version of the software. If problem persists please contact support for further assistance.
\$8	The hardware and/or operating system of the system accessing the library method does not support the system requirements of the library.	Check that the system meets minimum requirements of the software. Update IE from Microsoft.
\$9	Password required but not supplied	Software was unable to gain secure access to the LogTag. Obtain and install a newer version of the software. If problem persists please contact support for further assistance.
\$A	Data format error – please upgrade software	Upgrade your software.
\$B	Unsupported product – please update software	

\$C	Unsupported file – please update software	
\$D	LogTag version error – please update software	
\$E	Communications protocol error – please upgrade software	
\$F	LogTag configuration error – not supported or incorrect	Obtain and install a newer version of the software. If problem persists please contact support for further assistance. This error may require the unit to be returned for repair.
\$10	The software failed to perform the operation because the user cancelled the operation before it was completed.	Try again. Obtain and install a newer version of the software. If problem persists please contact support for further assistance.
\$11	An internal error has occurred.	Close all copies of the software and/or restart computer. Obtain and install a newer version of the software. If problem persists please contact support for further assistance.
\$12	LogTag Trip Usage limit exceeded	Return unit to distributor
\$13	Unable to communicate – Communication Port unsupported or Modem Port	Plug the interface cradle into a different communication port on the computer. Contact your IT support to investigate and resolve hardware conflicts on this communication port.
\$14	User Server cannot establish TCP connection	Check TCP/IP network support is installed and enabled. Check there is an active network connection, which is able to communicate/connect to the rest of the network. Contact your administrator to check TCP/IP connections and settings.
\$15	User Server cannot connect to locked user account	Contact your administrator to grant access to your account.
\$16	Internal error code indicating that a component of the software is out of date.	Obtain and install the latest version of the software. If problem persists please contact your distributor.
\$17	The software is unable to successfully connect to the LogTag User Server software.	Obtain and install the latest version of the software. If problem persists, contact your administrator to update the copy of LogTag User Server.

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